# FIRE-ESCAPES IN AMERICAN COMMERCIAL BUILDINGS.

By Chas. A. Daubney [A.], *Godwin Bursar* 1902, F.S.I.

THE following notes on fire-escapes in American commercial buildings were prepared during my tour as Godwin Bursar through some of the chief cities of the Eastern States of America in the autumn of 1902.

The danger to life in the event of fire in buildings of all classes is universally recognised. It is a problem which demands the attention of the architect and builder as well as of the employer and administrative authority. The devastation of property by fire has few, if any, compensations. It is true that new buildings may arise out of the ashes of a conflagration, and that new business and new methods may develop; but the public has ever demanded to be protected from fire hazard, until to-day fire-fighting is a science with its own specialists and propaganda.

The safety of the public in theatres, assembly-rooms, and similar buildings is dealt with by regulations and laws in all important cities, and the experience and practice upon this point have been so widely disseminated that a standard of safety is being gradually recognised. These notes do not deal with this important class of buildings.

In the United States very general attention is given to the safety of employés and others in the event of fire breaking out in commercial buildings. The building codes and regulations of the principal cities deal with this question, and year by year the requirements are being made more stringent and more far-reaching. The State laws, also, in many instances include provisions which enable the State bureaus to regulate all buildings, in addition to those outside the jurisdiction of city regulations.

In the event of fire life may be endangered through various causes, some of which may be enumerated as follows:

1. *Burning.*—There are few trades, excepting such as may be included under the head of "explosive trades," in which this danger requires to be seriously considered. There are, however, circumstances which may be overlooked in this connection, but which may very distinctly bring a trade into the explosive category. The dust resulting from the handling and manufacture of certain materials is highly dangerous, whilst other substances are liable to give off vapours which when mixed with the atmosphere, even in small quantities, are equally dangerous.

2. *Suffocation.*—Smoke and poisonous gases given off during a fire are the most prolific causes of danger to life. They rapidly extend throughout a building, and may cut off a line of exit as completely as would the fire itself. Smoke is in one respect a fire-alarm. It, however, is usually charged with gases, the products of suppressed combustion. The inhalation of these may quickly produce insensibility and death.

3. *Panic.*—It may be considered impossible to prevent danger to life through unreasoning panic. A false alarm of fire has frequently resulted in a calamity. Much may be done, however, to minimise the danger by providing well-known lines of exit.

4. *Inadequate means of escape.*—This is a defect which in every building may be remedied; and experience in all countries has indicated that the remedial measures must in the first instance be indicated by the public authorities. Private enterprise in this matter has not been satisfactory. It will be noted from the extracts from the regulations of various States and cities given below that a considerable diversity of opinion exists as to what should be demanded by the public from the owner or occupier of a building in which this danger to life may exist. This to a large extent may be accounted for by the fact that the United States is a young country, with phenomenal developments of trade and enterprise. Each State, too, has sovereign rights of internal legislation.

The regulations with respect to the provision of means of escape in case of fire are included in the building codes, and to a large extent, as will be seen below, apply to the majority of commercial buildings.

The administration of the law upon this point generally devolves upon the chief officer of the building departments. In Philadelphia all matters on building questions are dealt with by him. From his decision, however, there is an appeal to the entire official corps of building inspectors, and from this a final appeal to a commission, nominated by the Director of Public Safety, of three disinterested experts, who get two guineas each for their services, payable by the appellant. In New York there is an appeal from the decision of the Superintendent of Buildings on any point where the amount involved exceeds £200. The Appeal Court consists of representatives nominated by the following bodies: the American Institute of Architects; the Board of Fire Underwriters; two members of the Mechanics and Traders' Exchange, one a mason and one a carpenter; the Society of Architectural Iron Manufacturers, and the Real Estate Owners' Association; and the Chief of the Fire Brigade. They may be summoned by the Superintendent of Buildings to meet once a week, and receive two guineas each for every attendance. The decisions of the Appeal Court are final.

In Chicago, in all cases where discretionary powers are given to the Commissioner of Buildings, there is an appeal to arbitration. Each party nominates an arbitrator, and the two may nominate a third in the event of a disagreement. The cost of the proceedings must be deposited by the appellant with the city authority, and is returned to him in the event of the decision being given in his favour.

In the United States the provision of fire-escapes is not treated as an isolated problem. It is very properly recognised that loss of life, as well as destruction of property, by fire reveals a local defect. In the cities of Rochester and Detroit, for instance, the fire-brigade marshals deal with questions affecting the safety of employés in the event of fire.

By means such as these it is possible to deal comprehensively with the problem, and to obtain advantages unobtainable by isolated bureaus. The well-known American external iron fire-escape has been evolved in this way. It not only affords a rapid *exit* in case of fire, but is in addition a ready means of *approach* to all floors for the fire brigade.

The following points have a direct bearing upon the question of the safety of persons within a building:

### I.—THE PREVENTION OF FIRE.

While it is manifestly impossible so to regulate all commercial undertakings that the fire risk is entirely eliminated, it may be possible to reduce that risk to a minimum, and, by so doing, to simplify the question of the provision of means of escape. One of the most serious

problems in this connection in the United States is with regard to fire protection in the tall office buildings. In these buildings the exigencies of business and traffic demand that powerful machinery and boilers be provided within the buildings. These are invariably placed in one of the basement stories. Obviously no attempt is made to provide a direct means of escape for the persons employed upon the upper stories, of which some are 300 feet above the pavement level but at the same time the risk of a catastrophe, in the event of a fire breaking out in the basement or of a boiler explosion, is one which may not be ignored by the architect and the municipal authority. Fire or explosion might wreck the lower floors of any such buildings, and not only endanger the stability of the whole superstructure, but imperil the lives of the large number of persons engaged within these buildings. Safety, therefore, has to be sought by preventive measures, such as rigorous boiler inspection, regulations, and the fire-proofing of all constructional portions of these buildings. State laws endeavour to minimise the risk resulting from the careless or incompetent use of furnaces and boilers. Michigan requires all stationary steam boilers to be provided with safety low-water devices. New York requires all factory boilers to be inspected by a competent person once in every six months. By such means employés may to a large extent be protected from the possibility of such calamitous explosions as that which occurred on 26th November 1901, when seventy-eight persons were killed and injured at the factory of the Penberthy Injector Company, Michigan.

The Tenement House Law of the State of New York also provides against this risk by requiring "that every tenement house hereafter erected exceeding six stories, or parts of stories, in height above the kerb level shall be a fireproof tenement house; nor shall any tenement house be altered so as to exceed such height without being made a fireproof tenement house."

The Chicago City Building Ordinance also requires that buildings used for the sale, storage, or manufacture of merchandise, office buildings, hotels, and certain classes of domestic buildings, shall, if over 100 feet high, be entirely of fireproof construction. This implies, *inter alia*, that all parts of such buildings that carry weights or resist strains, and also all stairs and all elevator enclosures and their contents, shall be made entirely of incombustible material, and that all metallic structural members shall be protected against the effects of fire by incombustible and non-conducting materials. Door and window mullions must also be faced with cast iron, terra-cotta, or similar fire-resisting materials.

A very elementary but exceedingly useful regulation is in force in Buffalo as follows: "All gas brackets shall be placed at least 3 feet below any ceiling or woodwork, unless the same is properly protected by a shield, in which case the distance shall not be less than 18 inches. No swinging or folding gas brackets shall be placed against any woodwork. Gas lights placed near window curtains or any other combustible material shall be protected by a proper shield."

The New York Charter also provides "that all lights used in theatres and other places of public amusement, manufactories, stores, hotels, lodging-houses, and in show windows shall be properly protected by globes or glass coverings."

In view of the fact that a large number of disastrous fires in commercial premises are caused through inflammable material coming in contact with naked gas jets, such provisions as those above mentioned may properly be classed amongst those directly preventive measures tending to the safety of life.

While public buildings such as theatres, music-halls, churches, and chapels for the accommodation of large numbers of persons are very properly dealt with as regards means of escape, a somewhat analogous class of building—viz. dry goods stores—are, as a rule, ill-regulated upon this point. The risk from fire in these establishments is patent to all. One of

the largest of such establishments in the United States is eight stories high. Each floor, which is undivided by party-walls, and has an area of over 80,000 feet, is occupied by ranges of counters, and the gangways between are in parts encumbered with light drapery hangings. It is said that during the busy seasons between 10,000 and 20,000 persons may be found upon the premises at one time. In spite of the provision of external escape stairs, automatic sprinkling apparatus, &c., the outbreak of even a small fire when the premises are crowded with the public would probably result in a disastrous panic. Upon this point some of the building regulations appear to need amendment by providing for the subdivision of such extensive areas by proper party-walls.

New York will permit an ordinary building which fronts on three streets to be 105 feet wide and 210 feet deep. If it fronts on two streets it may be 12,500 feet in area. Power is given to the city authorities to grant a still further extension of this area in the case of buildings not exceeding three stories in height. There does not appear, however, to be any limitation to the extent to which an undivided fireproof building may be erected. In Philadelphia, too, enormous floor areas may be planned.

In Chicago buildings of ordinary construction are restricted to floor areas of 9,000 feet; buildings of slow burning or mill construction may extend to 12,000 feet; and buildings if erected of fireproof materials throughout need no dividing walls if under an area of 15,000 feet. Openings protected with fireproof doors in the dividing walls are permitted. Public safety from fire demands that the enormous conflagration risks existing in the neighbourhood of these buildings should be more strictly supervised. Few commercial buildings require such extensive undivided floor-space.

The subdivision of premises by party-walls affords a substantial check to a conflagration, and an excellent means of escape by the construction of openings in the walls may be provided. In the event of a fire breaking out in any one portion, persons can escape through the openings into an area unaffected by flame or smoke. The area of an undivided building is a well-recognised item in the consideration of the fire risk on that building. An estimate of the extent to which a building may be erected without unduly increasing the risk to the building and employés may be gathered from the regulations of the insurance companies. A normal building of ordinary construction is one with an area not exceeding 2,500 feet, and with a height not exceeding fifty feet; if fireproof construction be used, then the building may be extended to an area of 5,000 and to a height of 100 feet. In a building of the latter class at least 2,000 persons can be employed, assuming 250 cubic feet as the allowance for each employé, which is the general requirement in the United States, as it is under the Factory Law in this country. It may also be noted that a building of 5,000 feet area can be so planned with alternative means of escape that none of the employés shall be compelled to travel on any floor more than about 100 feet in order to reach an escape. This limit of about 100 feet is also one incorporated in some European regulations.

### II.—THE LIMITATIONS OF FIRE.

As has been suggested above, regulations could not be framed so as entirely to prevent fire breaking out in a commercial building; much, however, can be done to prevent the spread of fire. By the use of cross walls extensive and dangerous conflagrations may be checked. The vertical spread of fire in a building must also be checked. This is naturally accomplished by providing unpierced floorings, or where stairs, lifts, &c. are necessary by separating them from the building. Thus flame and smoke would not pass upwards, and the burning materials would not fall from floor to floor.

At a recent disastrous fire in London the conflagration appears to have been limited for some time to one room, and kept in check by an ordinary glazed partition. It rapidly spread, however, when the glass was broken by heat and water, and the flames and smoke found ready escape up a shaft occupied by an open lift and staircase.

It is true that lifts and staircases may form one of the chief interior ornamental features of an important building. The necessity of providing adequate safety for the employés within a building may require some slight modification in the present methods of planning staircases, &c., but it is suggested that this modification need not militate against architectural effect.

In the United States very definite opinion has been formed upon the treatment of lifts and other shafts in a building. In the Buffalo building laws is found a valuable provision for the prevention of the rapid spread of fire through burning materials falling through skylights at the bottom of lighting shafts. These skylights are required to be constructed with prismatic lights in iron frames or with thick glass protected with wire netting. Similar materials or wired glass must be used in manufacturing premises, hotels, &c. for skylights over portions of premises to which the public has access.

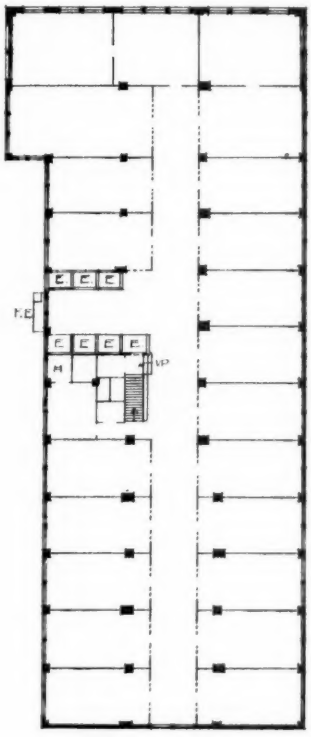



FIG. 1.—PLAN OF THE NATIONAL LIFE BUILDING, CHICAGO.
(Messrs. Jenney & Mundie, Architects, Chicago.)
E E, Passenger Lifts. F.E. Fire Escape. H, Goods Lift.

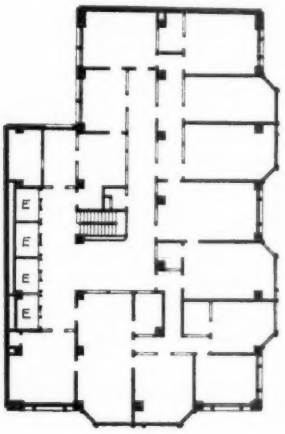



FIG. 2.—PLAN OF THE RELIANCE BUILDING, CHICAGO.
(Messrs. D. H. Burnham & Co., Architects.)
E F, Passenger Lifts.

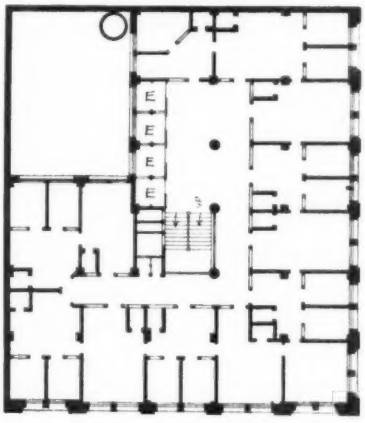



FIG. 3.—PLAN OF FORT DEARBORN BUILDING, CHICAGO.
(Messrs. Jenney & Mundie, Architects, Chicago.)
E E, Passenger Lifts.

The Chicago Building Ordinance requires that the well-hole of lifts shall be supplied with hatches to close automatically, otherwise, in all non-fireproof buildings, the shaft must be enclosed with an entirely self-supporting brick wall or tile partition extending from the foundations to six feet above the roof. In buildings of fireproof construction the enclosure must be of incombustible material of a light construction which may be supported upon the floor joists. The door openings must be fitted with iron doors so secured that, excepting on the ground floor, they may not be opened from the inside. A skylight and ventilator, one-twentieth the area of the shaft, must be provided at the top.

The New York State Tenement House Law permits lifts and dumb waiters to be constructed in the well-hole of stairs, where the stairs themselves are enclosed in brick walls and are entirely fireproof. In other cases the enclosures must be fireproof throughout, with self-closing doors at the openings. Under the New York Building Code also all dumb-waiter shafts generally must have walls of brick or other fireproof material with self-closing fireproof doors, and where the shaft does not go to the level of the floor of the lowest story the bottom of the shaft must be sealed with fireproof material.

Under this code lifts in non-fireproof buildings of the factory class must be enclosed with brick walls extending three feet at least above the roof. The openings in these enclosures must be fitted with fireproof shutters or doors, and the top must be covered with a skylight three-quarters of the area of the shaft. Passenger elevators, enclosed with open grille work, however, may be erected within staircases where the stairs and enclosures are fireproof throughout. In all new and existing hotels, if of non-fireproof construction, lifts must be enclosed in fireproof walls.

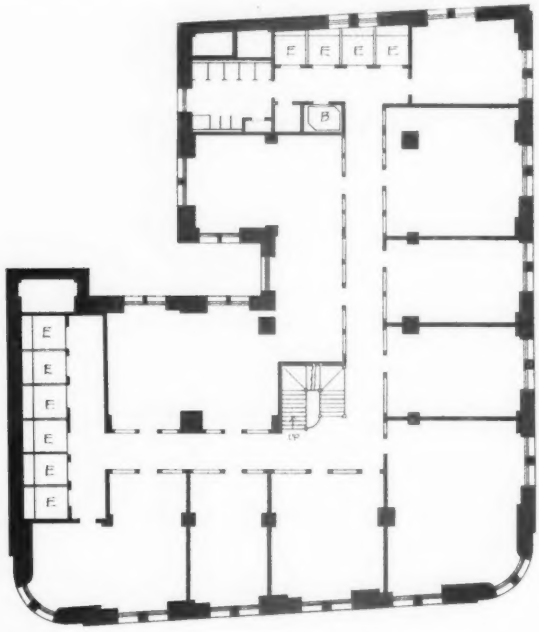



FIG. 4.—PLAN OF THE HANOVER BANK BUILDING, NEW YORK.
(Messrs. Clinton & Russell, Architects, New York.)
EE, Passenger Lifts. B, Bank Lift.

The Pittsburgh regulations require all buildings over sixty feet in height to be entirely of slow burning and fireproof construction, and in such buildings lifts to be enclosed entirely with incombustible materials. Only such openings as are necessary for doors are permitted in the enclosures. The enclosures may be of 4-inch solid wood. Under these regulations no staircase shall encircle a lift.

The Buffalo regulations are somewhat similar.

The Rochester (N.Y.) regulations are less stringent: they require lifts, if enclosed all up, to have enclosures of brick or wood sheathed on each side with metal and fireproof doors to the openings. Should they not be entirely enclosed, metal-work enclosures not less than seven feet high may be used.

From these regulations it may be gathered that the consensus of opinion points to the desirability of complete enclosure of lifts. In this way the rapid diffusion of smoke and flame throughout a building may be prevented. Naturally passenger lifts in the well-hole of staircases are, to a large extent, unobjectionable, from the point of view of fire risk, so long as the staircases themselves are properly enclosed.

A reference to figs. 1, 2, 3, 4, 5, and 6 of the plans of some tall office buildings will show that generally the lifts in these buildings are unenclosed—open ornamental grilles are used. These buildings are of fireproof construction throughout, and few ordinary fires have been recorded in connection with such. Possibly, therefore, it is unnecessary to insist upon

their lifts being enclosed. Fig. 1 is one of the upper-floor plans of the 12-story National Life Building, Chicago. Fig. 2 is a typical floor-plan of the 16-story Reliance Building, Chicago. These two plans indicate the small amount of external wall space possible under the American system of steel construction. Fig. 3 is a plan of the 13-story Fort Dearborn Building, Chicago. Fig. 4 is a plan of the Hanover Bank Building, the most recently erected "skyscraper" in New York. Fig. 5 is the plan of the 11-story Potter Building, New York. Fig. 6 is the plan of the Exchange Court Building, New York. Many persons are of opinion that in these buildings ordinary fire risk to life may be looked upon as non-existent. It is true that little besides the ordinary furniture, books, &c. within the offices is inflammable, and a fire would be easily confined to a single room, without creating much notice or alarm in the building. Apart from the question of furnace and boiler risk in these buildings, no provision appears to be made with regard to the shops usually found in the ground floor hallway. Tobacconists' and newspaper stalls are sometimes provided here, and a slight outbreak of fire in one of these stalls might easily result in the lift and staircase wells becoming instantly charged with smoke, which would spread throughout the upper halls and corridors and cause alarm and panic, resulting in serious risk to life. These shops should be prohibited, and if the lifts were kept at a distance from the stairs and both shut off from the main corridors by swing doors, if only of ordinary glazed construction, the risk of the fire spreading would be materially diminished.

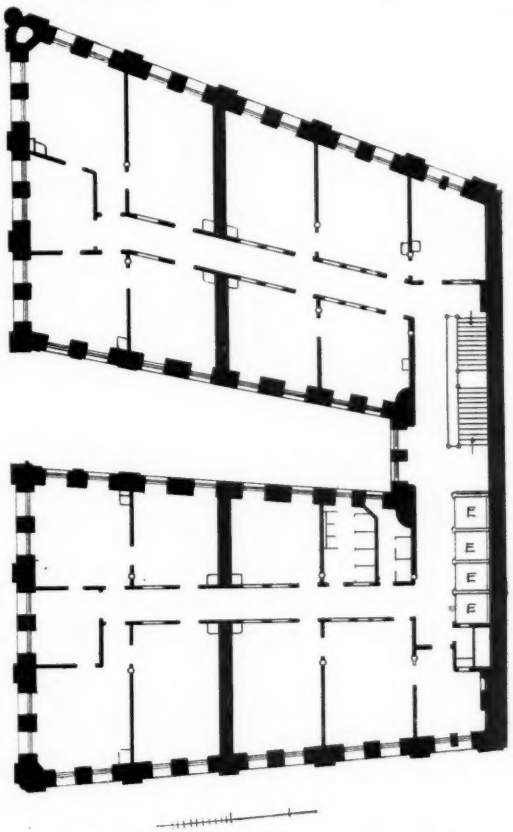



FIG. 5.—PLAN OF THE POTTER OFFICE BUILDING, NEW YORK.
E E, Passenger Lifts.

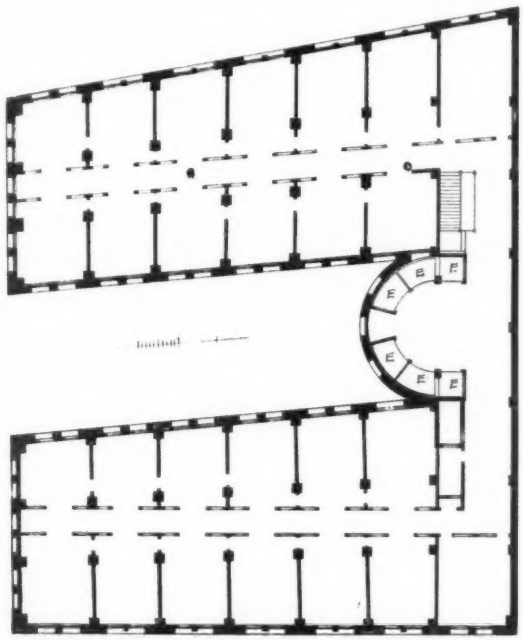



FIG. 6.—PLAN OF THE EXCHANGE COURT BUILDING, NEW YORK.
(Messrs. Clinton & Russell, Architects, New York.)
E E, Passenger Lifts.

Objection is frequently taken to the enclosing of lifts with fireproof walls. It is urged that doors, even if self-closing, must be fixed open during the passage of goods, and may easily be left open afterwards by careless and indifferent persons, in which case the benefit of the complete enclosure is lost. This difficulty can be met in several ways. Hatches closing automatically may be placed at each floor level, but, as they must be pushed open by the lift cage during its travel up and down, the speed of the lift is curtailed. Automatically lifting doors may be provided. The objection to this arrangement, however, is that the doors rise and fall as the cage passes all intermediate floors. The best form of lift door is one which can only be opened from the inside and which locks the lifting apparatus, when open, by a simple device of cord and pulley. The doors cannot remain open excepting when the cage itself is opposite, in which case the lift well is plugged at that point, and fire and smoke cannot ascend.

### III.—THE SUPPRESSION OF FIRE.

The ability to suppress a fire in its initial stages is an important element in considering means of escape from fire. Private hose hydrants coupled with a private fire brigade may do much in this direction. It is, however, not unknown for such provisions to fail under the stress of an actual outbreak. Plentiful supplies of sand, buckets of water, and hand grenades have been advocated as a ready method of fire extinction in the initial stages.

A system of sprinklers throughout a building is perhaps more effectual. It lessens danger to life, inasmuch as a volume of water will usually descend immediately upon an outbreak and suppress flame and smoke. It may also be claimed that the sight of a stream of water descending will tend to prevent unreasonable panic amongst employés.

A point of considerable importance in this connection is that many employés may be rendered incapable of flight in the event of even a slight outbreak. They will, therefore, remain in an atmosphere rapidly becoming charged with noxious vapours unless the fire is dealt with immediately upon the outbreak. Some of the large commercial buildings have been completely equipped with these sprinklers at a cost not exceeding £7 per 1,000 feet of floor space protected. This is a trifling expenditure upon the part of the owner or occupier, when, according to insurance calculations, the fire risk to property, and incidentally to life, will be reduced by at least 40 per cent.

In the United States much is expected of its fire brigade, and it is assumed that in different problems of escape, such as those in connection with tall office buildings, the fire brigade will be speedily upon the scene of an outbreak to assist the occupants. It is assumed that in the event of fire in these and similar lofty buildings, the occupants will enter their rooms and close the doors until the fire has been subdued. To this end the New York Building Code demands that in all new buildings exceeding 150 feet in height a steam pump and a lift shall be kept in readiness for the use of the members of the fire department during all hours of the day and night and on holidays and Sundays.

As already pointed out, the question of escape in case of fire is not dealt with alone but in conjunction with other questions affecting the problem. For instance, opportunity is taken by the authorities when providing external iron fire-escapes to attach standpipes. In this way the Fire Brigade are able in the majority of cases, and without the assistance of the ordinary street fire-escape, to reach immediately any of the upper floors of a building, to attack the fire, and to render assistance to persons who have been unable to escape.

The Chicago Building Ordinance requires that generally all manufacturing premises, office and domestic buildings, churches, &c., four or more stories in height, shall be provided with external balconies, ladders, and standpipes at each floor level. The standpipe must be

three inches in diameter, with two hose connections at the lower end and at each floor level. Buffalo also empowers the Board of Fire Commissioners to call for standpipes to be affixed upon buildings in addition to the fire-escapes referred to below.

It will appear, therefore, that to some extent such buildings are not self-contained as regards means of escape, but are dependent upon external assistance. Although, as in March 1888, when all street traffic in New York was blocked owing to a heavy blizzard, there may be a few occasions when the Fire Department are unable to render the anticipated assistance, this disadvantage is counterbalanced by the direct influence which the fire department possesses in fire questions affecting all buildings.

## IV.—DIRECT MEANS OF ESCAPE.

Many city ordinances as above referred to specifically empower the authorities to demand, where necessary, the provision of adequate means of escape from the majority of buildings. This applies to old and new buildings alike. With regard to old buildings, however, it appears that constitutionally it is difficult, if not impossible, for the authorities to sustain a demand which would entail internal structural alterations.

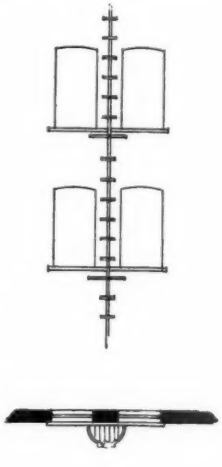


FIG. 7.

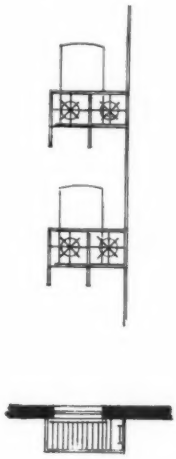


FIG. 8.

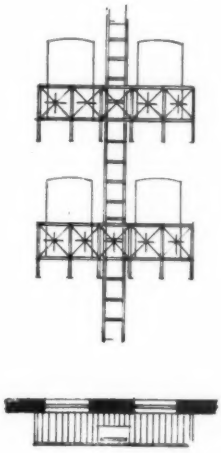


FIG. 9.

The Chicago Building Ordinance emphasises this point by stating that excepting in cases where the immediate safety of the occupants of buildings is concerned, nothing in the ordinance shall be considered as requiring alteration or equipment of buildings existing at the time of the passage of the ordinance, and at that time complying with the ordinance then in force.

Retrospective legislation is weak. On the other hand, no difficulty is experienced in a demand for an *addition* to an existing building. It is possible, therefore, to add to any building external fire-escapes, ladders, balconies, &c.

Although there are regulations in force in some parts which call for movable fire-escapes, such as ropes to each bedroom window in hotels, they are widely regarded as escapes of suspicious value. Many ingenious appliances have been introduced to meet the need of a ready means of escape; but canvas chutes, wire ladders, and other movable forms have been found wanting under actual fire tests. Ropes are difficult to descend by any except athletes, and they are an impossible form of escape for females; canvas chutes require skill and care in their manipulation, and demand from those about to descend nerve and courage. All these proposed forms of fire-escape may be found out of order upon the emergency for which they were provided. Further, the occupants or employés may be unable to work them or may be ignorant of their use. In addition the disturbance caused by an alarm of fire may be such

as to upset all preconceived arrangements for the operation of these escapes. An illustration of this occurred recently in one of the American cities where a weaver, fearing that he might be unable to escape rapidly down his staircase in case of fire, fastened a rope to the loom at which he was constantly working, and coiled it on the cill of the window by his side. An alarm of fire did occur, when he immediately opened his window and, neglecting the means of escape prepared by himself for his own use, and with which he was entirely familiar, leaped through the window over the coiled rope, and was killed upon the pavement beneath.

At a critical moment should many persons be depending upon such or similar unsubstantial appliances, the risk of failure is increased. The well-known form of American fire-escape which is so obtrusively in evidence, has been evolved from many experiments, and it must be judged as an appliance which, while open to several object ons, meets the requirement for a comparatively inexpensive article, and can be applied to the majority of buildings. Some of the forms taken by these escapes are indicated in figs. 7, 8, 9, 10, and 11. Fig. 7 is an old form, and consists of an upright iron post with cross-pieces at intervals for foothold, carried up the front of a building; access is obtained to it from adjoining windows by means of small pierced iron landings. Only athletic and cool-headed men could be expected to descend such a contrivance, and then only under the most favourable circumstances. Fig. 8 illustrates an improved form of escape which provides a small iron balcony at window-sill level with a balustrade and vertical iron ladder at one end, down which persons can escape by small manholes in the flooring of the balconies at each level.

FIG. 10.

FIG. 11.

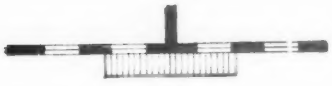


FIG. 12.

FIG. 20.

FIG. 21.

Fig. 9 is a modification of the last form, with the ladder in the centre of the balcony facing the street. Objection may be taken to these appliances on the ground that there is no protection afforded to persons descending in the event of fire bursting out from openings below them. The vertical form of ladder is also an objectionable feature. Efforts have been made to obviate the difficulties by such contrivances as those illustrated in figs. 10 and 11. These can be placed opposite a wide pier or blank wall, and afford to some slight extent an easy form of descent. As will be readily seen, these latter forms naturally require a great protection over the public way. Direct supports from below are unobtainable, and the staircases, therefore, must be hung up to the face of the building.

Fig. 12 is a simple but excellent form of escape. A balcony gives access to and from the windows of adjacent buildings. In the event of fire persons may rapidly and safely escape on the level into an area unaffected by flame or smoke, and by whatever means this object is attained it is satisfactory. As may be seen, this form of escape is only possible where the two buildings are in one ownership, or where adjoining owners are willing to co-operate. Fig. 13 is the plan of a pair of New York tenement houses which readily lend themselves to this method of escape. The modern form of escape in general use may be gathered from

fig. 14. This is the form required by the New York State Department of Labour and illustrated upon its notice for fire-escapes.

In this case balconies not less than 6 feet long and 3 feet wide, and embracing two windows, are provided at each sill level, and slanting stairways give easy communication from floor to floor. At about the first-floor level a counterbalanced drop-ladder is provided. The illustration shows the ladder suspended vertically. Under some city ordinances it is hinged and suspended, so that when lowered it forms a sloping stairway similar to those above. The specification given below for these balconies will indicate the extremely light form of construction adopted. Accidents, however, from this cause are practically unknown.

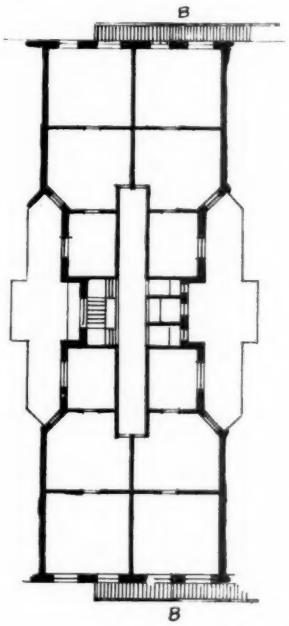



FIG. 13.—PLAN OF A NEW YORK TENEMENT HOUSE.

B B, Escape Balconies.

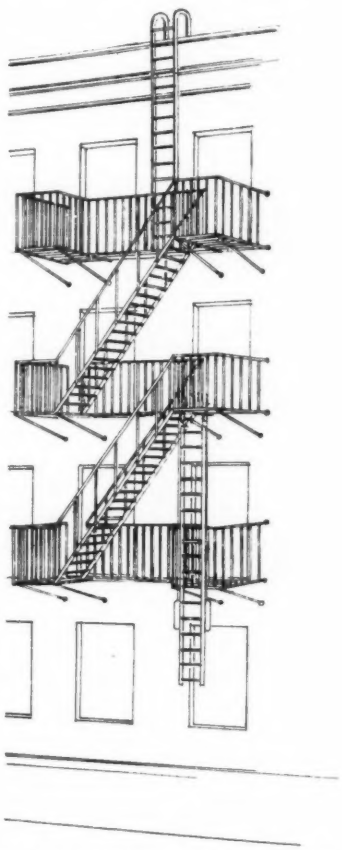


FIG. 14. — ILLUSTRATION OF THE FIRE-ESCAPE REQUIRED UNDER THE NEW YORK LABOUR LAW.

"The brackets must not be less than $\frac{1}{2}$ inch by $1\frac{3}{4}$ inch wrought iron, placed edgewise, or $1\frac{3}{4}$ inch angle iron, $\frac{1}{4}$ inch thick, well braced, and not more than 3 feet apart (unless to obtain headroom at balcony openings); and braces to brackets must not be less than 1 inch square, wrought iron, and must extend two-thirds of the width of the respective brackets or balconies. In all cases the brackets and braces must go through the wall, and be provided with screw-nuts and washers not less than 5 inches square and $\frac{1}{2}$-inch-thick; washers must be provided on the outside of the wall on brackets $\frac{1}{2}$ inch thick and 3 inches square. The part going through the wall shall not be less than 1 inch in diameter.

"Top rails of balconies must be $1\frac{3}{4}$ inch by $\frac{1}{2}$ inch wrought iron, or $1\frac{1}{2}$ inch angle iron, $\frac{1}{4}$ inch thick, and in all cases must go through the walls and be secured by nuts and 4-inch-square washer on inside of wall, at least $\frac{3}{8}$ inch thick; and no top rail shall be connected at angles by the use of cast iron.

"Bottom rails must be $1\frac{1}{4}$ inch by $\frac{3}{8}$ inch wrought iron, or $1\frac{1}{2}$ inch by $1\frac{1}{2}$ inch angle iron, $\frac{1}{4}$ inch thick. Where, in order to obtain headroom in balcony openings, the central brackets are placed more than 3 feet apart, 2-inch by 2-inch angle-irons, $\frac{1}{4}$ inch thick, must be used for bottom rails. In frame buildings the top rail must go through the studdings and be secured by washers and nuts, as in the case of brackets.

"*Connections or filling-in Bars.*—Top and bottom rails may be connected by $\frac{3}{4}$-inch by

¼-inch iron, not more than 3 feet apart, with ¼-inch by 1-inch iron cross-bars, all well riveted at top and bottom and also at crosses. If filling-in bars are used, they must not be less than ½ inch round or square, wrought iron, placed not more than 6 inches from centres, and well riveted to the top and bottom rails.

"Stairs in all cases must properly incline, and be not less than 18 inches wide, and constructed of ¼-inch by 4-inch wrought-iron sides and strings. Steps must be of not less than 6 inches treads, not more than 9 inches apart, and ¼-inch by 1-inch wrought iron, and 1 inch apart, and well riveted or bolted to the strings. No cast-iron steps shall be used. The stairs must be secured to a bracket on top, and rest on and be secured to a bracket or cross-bar at the bottom. All stairs must have a ¾-inch handrail of wrought iron on both sides, well braced and securely fastened.

"Floors of balconies must be of wrought iron, 1 inch by ¼ inch slats; placed edgewise, not over 1¼ inch apart, with three rows of thimbles strung on wrought-iron rods running through and well fastened at the ends. Flooring must be fastened to bottom rail with ⅜-inch round wrought-iron clips not more than 4 feet apart. The openings for stairways in all balconies shall be not less than 20 inches wide and 3 feet long, and have no covers. The sides of each such opening shall be guarded by a rail.

"Drop-ladders from lower balconies, where required, shall not be less than 12 inches wide, and shall be made of 1½-inch by ⅜-inch sides and ⅝-inch rungs of wrought iron. The drop-ladder shall be a balance-weight ladder, hung to bottom of a second balcony by a chain running over loose pulleys securely fastened. The ladder must be securely held in place at lower balcony by clips so arranged as to allow free movement of the ladder up and down. Pulleys and clips should be made to work free, so that rust will not interfere with the use of the ladder. A 24-inch ladder shall extend from the upper balcony to 30 inches above the roof. In no case shall the ends of balconies extend more than 9 inches over the brackets.

"The height of railing around balconies shall be not less than 3 feet."

These escapes must be connected with the interior by easily accessible and unobstructed openings.

The Michigan Bureau of Labour demands that the windows and doors leading to all fire-escapes shall open outwards or upwards when provided with a counterbalanced weight, such windows to be not less than 36 inches in height and width. Chicago requires that the floors of these balconies shall be constructed either of heavy cast iron, ice-proof, or steel, and capable of carrying not less than 500 lb. The Philadelphia requirements call for a strength of 80 lb. per foot super. upon the balconies, and 200 lb. per tread upon the ladders.

Under the New York Building Code, the Department of Buildings has full and exclusive power to require the erection of these fire-escapes. The buildings affected by this regulation comprise dwelling-houses occupied by three or more families, three-story hotels and lodging-houses, boarding-houses with more than fifteen bedrooms, factories, mills, manufactories, hospitals, asylums, and all three-story workshops and stores, school and five-story office buildings.

The New York State Tenement House Law calls for fire-escapes directly accessible from each apartment, but in old non-fireproof tenement houses the party-wall balcony escape referred to above is accepted as a substitute, provided it leads to another building, and the two buildings are completely separated by an unpierced wall.

The Rochester (N.Y.) Penal Ordinance relating to buildings can require fire-escapes on all manufactories, factories, and three-story hotels, &c.

The Buffalo and Philadelphia Regulations cover a somewhat similar class of buildings, while the Chicago Ordinance insists that with few exceptions all buildings shall have at least one of these iron escapes.

Fig. 15 is the plan of a tenement factory, on which fire-escapes were ordered. The building consists of a central hallway extending from front to rear and containing an open structure, a passenger lift in the front portion, and a goods lift at the rear. Immediately upon the outbreak of a fire the central hall would probably be filled with smoke, and thus rendered impassable. The authorities have therefore demanded a fire-escape at the rear, and communicating balconies at the front, affording means of access from one side of the building to the other.

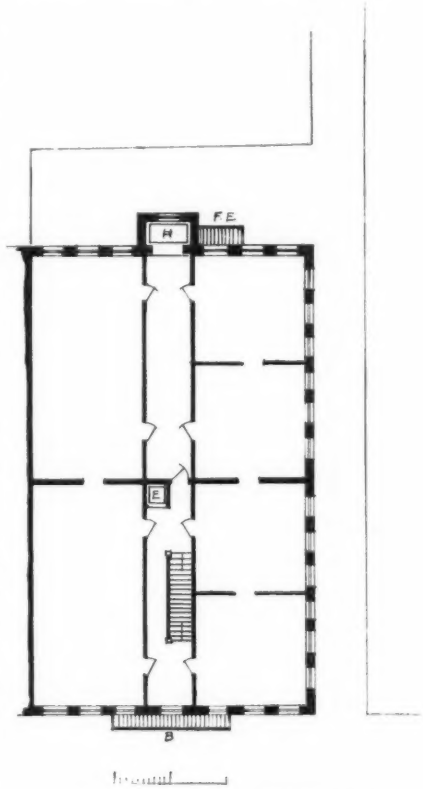



FIG. 15.—PLAN OF A BUFFALO TENEMENT FACTORY.

F, Passenger Lift. H, Goods Lift. F. E, Fire-escape. B, Escape Balcony.

Instances may be quoted where upon an outbreak of fire this form of escape has proved wanting, owing to the occupants crowding upon one which was involved in flame and smoke. On the other hand it appears that the greater proportion of persons whose lives are imperilled readily escape unassisted by means of these external iron stairways, while a large number in addition, who through injury, fear, or other causes are unable to escape, are rescued by the Fire Department down these escapes.

In many of the principal cities in the United States a permit must be obtained from the Building Department prior to the commencement of building operations. As a rule complete plans and details must be supplied before the permit is obtained, and a full opportunity is therefore afforded to secure what is required by law on all questions, including those relating to means of escape. As a rule the building codes specifically state what shall be provided in new buildings. The question of escape to a large extent resolves itself into the adequate provision and protection of the ordinary stairways, with the addition of some alternative means of escape. Some of the conditions governing a good escape staircase are as follows:—

(1) It should be situated in a convenient position.

(2) Easy escape up to and by it should be maintained.

(3) It should be sufficient to accommodate the maximum number of persons who may be called upon to use it at one time.

(4) It should be separated from the building and protected from all dangerous elements.

(5) It should deliver at ground level into the street.

(6) It should be in ordinary use by the employés or occupants of the building.

The New York Building Code provides that all new buildings, such as stores, factories, hotels, or lodging-houses, with an area of between 2,500 feet and 5,000 feet shall have at least two continuous lines of stairs remote from each other, and an additional line of stairs for each 5,000 feet of area in excess of the first 5,000 feet.

Figs. 16 and 17 illustrate the plan of an hotel recently erected in New York. Two lines of stairs have been provided, one at each end of the main corridor. Fire escapes are also

provided. It may be noted, however, that the staircases deliver into a shop or restaurant on the ground floor, and are unenclosed. A fire upon the ground floor would probably render the whole of the corridors on the upper floors impassable. In the disastrous fire at the Hotel Windsor in New York on 17th March 1899 many of the visitors lost their lives owing to their inability to reach the staircases.

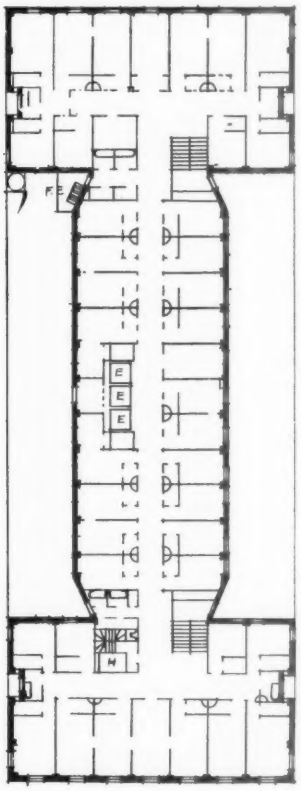



FIG. 16.—UPPER FLOOR PLAN OF THE MARTHA HOTEL, NEW YORK.
(Mr. R. W. Gibson, Architect, New York.)
E E, Passenger Lifts. F, F, Fire-escape. H, Goods Lift.

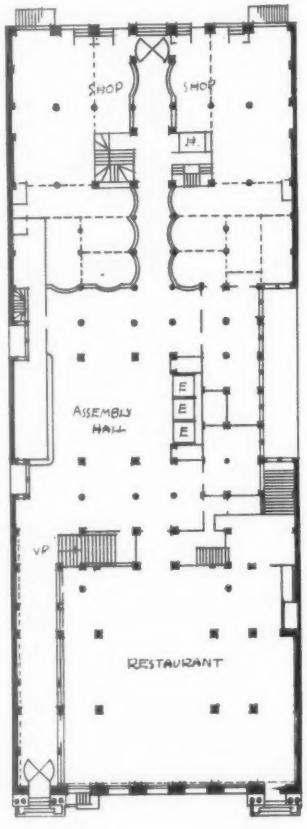



FIG. 17.—GROUND FLOOR PLAN OF THE MARTHA HOTEL, NEW YORK.
(Mr. R. W. Gibson, Architect, New York.)
E E, Passenger Lifts. H, Goods Lift.

In buildings above 15,000 feet in area the number of stairs must be proportionately increased, or as the Commissioner of Buildings shall decide. He has adopted the following regulations for stairs and exits in such buildings. They must have at least four continuous lines of stairs, none less than 3 feet wide; one flight at least shall be provided for each 10,000 square feet, and they shall be so placed that it shall not be necessary to travel more than 100 feet to reach any one flight. The number of persons to be accommodated in the building shall be calculated at one for each 10 square feet of floor area in stores; at one for each 20 square feet of floor area in factories; and at one for each 50 square feet of floor area, or two for each room, in hotels and lodging-houses; and the minimum total width of stairs at any one story must be equal to one foot for each 100 persons to be accommodated upon the largest floor. This width must be increased beyond this minimum by 6 inches in stores, and 3 inches in factories for each 10,000 square feet of floor area of each story above that floor. Ground-floor exits must be at least 4 feet wide, and the total widths of all exits must be equal to the widths of the staircases from the first floor. It is not compulsory for these stairs to be enclosed, but if they should have fireproof enclosures external fire-escapes may not be required. Doors leading to enclosed stairs must be at least as wide as the stairs, and never less than 4 feet. If passenger lifts are enclosed in solid shafts, they are looked upon as of some value as means of escape, and a reduction in the number of persons to be accommodated in the building will be allowed at the rate of one person for each three-quarter square foot of car floor surface.

It will be noted that unfortunately the office buildings do not come within the scope of this clause, and the modern tall buildings of this class in New York can therefore be erected with unprotected staircases, &c. But as power is given to the Department of Buildings to require fire-escapes upon the outside of all buildings, building owners are careful to provide satisfactory internal stair accommodation.

Reference has already been made to the unprotected nature of the staircases, halls, &c. in these buildings.

Under the New York Tenement House Law new non-fireproof tenement houses must have fireproof outside stairways, otherwise fire-escapes will be called for. Fig. 18 gives a plan of a New York tenement house as may be now erected. One flight of stairs at least shall extend from the ground-floor level to the roof, and be not less than 3 feet wide for the first twenty-six suites, and an additional flight of stairs for every additional twenty-six suites. Fire-proof buildings of this class require a stairway for each thirty-six suites; but an enclosed power lift, not less than 36 feet from the main staircase, is considered equivalent to an additional staircase. In all such buildings over three stories high the stair hall, including the staircases, must be fireproof throughout. In non-fireproof buildings they must be enclosed with brick walls, self-closing doors, and wired glass must be provided to all openings in the enclosures. Rochester and Buffalo require workshops and sale-rooms to have two staircases 3 feet wide for 100 persons, and 5 feet wide for 300 persons, and three staircases 5 feet wide for 800 persons. One less flight of stairs in each case is allowed if the building is fireproof.

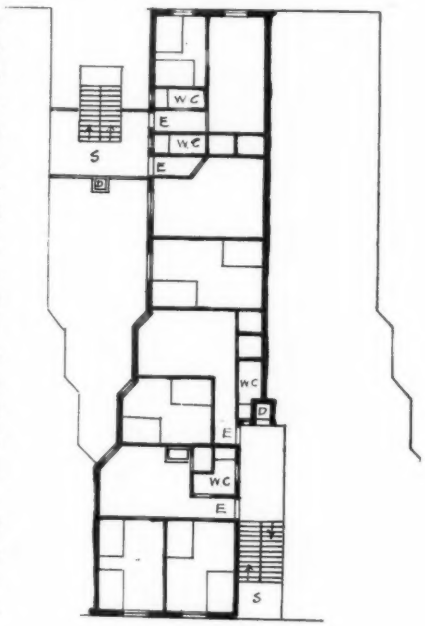



FIG. 18.—PROPOSED PLAN FOR NEW YORK TENEMENTS
(Mr. R. W. Gibson, Architect, New York.)
S S, Open Staircases. D D, Dumb Waiters. E E, Entrances to tenements.

Chicago has somewhat similar regulations, but demands at least two staircases if the floor area is over 7,000 feet, and that no staircase shall be constructed around or alongside open lift shafts in buildings over four stories high.

Office buildings of ordinary construction of less than 2,000 feet area require one staircase 5 feet wide, or two staircases 3 feet wide, in buildings of ordinary construction, with another staircase for each additional 2,000 feet.

Although, as may be noted from the above summaries, provision is made in many instances for the number and width of staircases, enclosures are not provided for in every case. An open staircase admittedly forms but an imperfect line of escape in case of fire. In many instances owners, at the instance of the insurance offices, have built in advance of building requirements. Fig. 19 is the plan of a Detroit factory which has been provided with the statutory external fire-escapes. By sacrificing a small amount of floor and wall space, the staircase next the side street has been well protected from a possible outbreak of flame and smoke on either side, and could be easily reached from any floor level by means of the doorways at each end of the balconies in connection with the staircase. A somewhat similar fire-escape is also provided adjoining the main staircase. The lifts have brick enclosures and

solid hardwood doors. Floors are fire-resisting, and the main staircase is of iron enclosed in brick walls. The doorways, however, to this staircase are hung with sliding tin-covered doors, which will close automatically when a small twine fastening is burnt through.

The addition of self-closing doors to these doorways would protect the staircase from smoke, and it appears that the external fire-escape at the rear would then be unnecessary.

The building ordinance in Pittsburgh is a Pennsylvania State law, and demands that exit staircases shall be enclosed. No provision, however, is made for the protection of the doorway openings. As above mentioned, this is an essential provision if a staircase is to be depended upon as a means of escape by persons upon an upper floor. The ordinance requires that

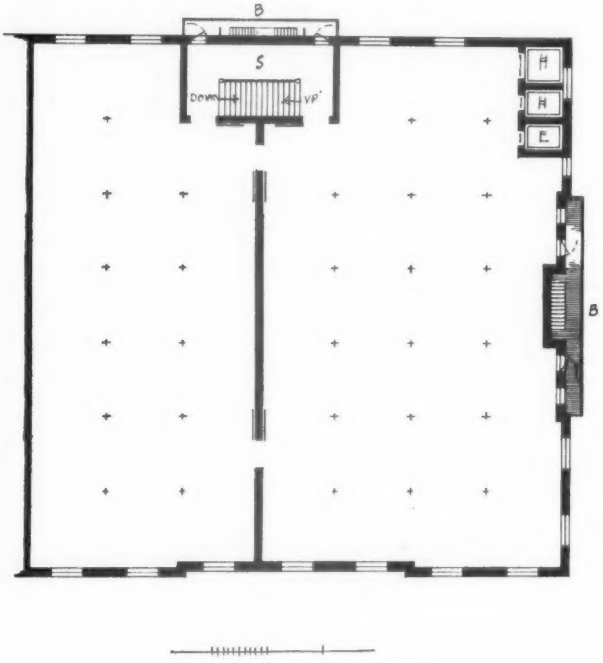



FIG. 19.—PLAN OF A DETROIT FACTORY.

S, Iron Staircase. B, External Fire-escape and Balconies. H, Goods Lifts. E, Passenger Lift.

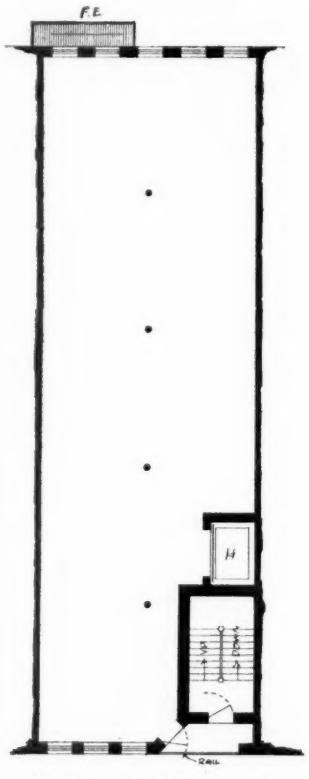



FIG. 22.—PLAN OF A PHILADELPHIA FACTORY.

F.E, Fire-escape. H, Goods Lift.

two-story schools, churches, public buildings, hotels, factories, &c., shall have at least one brick-enclosed staircase, with no interior openings other than those which afford exit from the different parts of the buildings—three-story stores more than 4,000 feet floor area on any floor above the first floor may have an enclosed "tower" fire-escape on one of its fronts. Such an escape will be an equivalent to an external iron fire-escape of the class illustrated in Fig. 14 [p. 63]. Two external fire-escapes can be demanded if a building can accommodate 100 to 500 persons, and more than two if the internal stairways are liable to be blocked with smoke, and persons may not speedily and safely escape.

An objectionable feature of the form of "tower" fire-escape as specified by this ordinance is the permission it gives for it to be made in circular form at the lower end. Fig. 20 [p. 62]

illustrates an old form of tower fire-escape, which, however, is now out of date. Circular stairs are, as a rule, quite unsuitable for purposes of exit in time of need. Fig. 21 [p. 62] illustrates an effort to surmount the possibility of an external staircase becoming impassable through smoke and flame entering the enclosure through doorways. The circular iron staircase is attached to the face of the building and enclosed in corrugated iron sheeting, with approaches on either side along small balconies.

The Philadelphia requirements as to means of escape are also contained in a Pennsylvania State law. The "tower" staircase above referred to is applied generally to new buildings where escape is required. Figs. 22, 23, 24, and 25 illustrate the plans of this form of stairway. Fig. 22 shows the "vestibule tower" stairway. A brick-enclosed staircase is erected adjoining the main street front. Entrances to the floors and the staircase are provided off a concrete "vestibule" at each floor level. Fire on the building cannot reach the staircase which is the exit in every-day use by the employés. In this example a brick-enclosed lift with fireproof doors is used for the transference of goods from floor to floor; and as the floors are unpierced by other openings, the risk of fire spreading upwards is slight. Should a fire break out on any floor near the front window, a light iron external balcony ladder is provided at the opposite end of the building for escape.

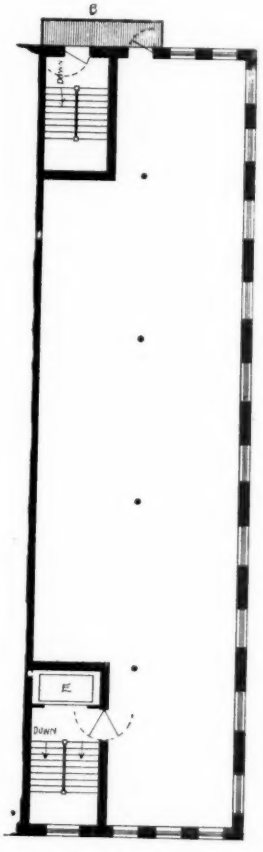



FIG. 23.—PLAN OF A PHILADELPHIA TENEMENT FACTORY.

B. Balcony. E. Passenger or Goods Lift.

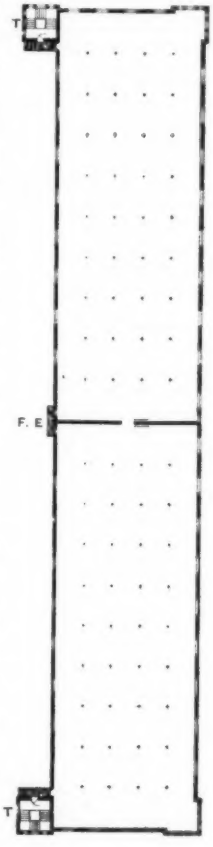



FIG. 24.—PLAN OF A PHILADELPHIA FACTORY.

F. E. Fire-escape. T, Tower Staircases.

Fig. 23 illustrates a "balcony tower" escape in which an external balcony takes the place of the concrete landing provided in the "vestibule" escape. This plan shows a floor of a tenement factory in which power, light, &c. are supplied to the occupants by the owner of the building. The main entrance stairway enclosure contains a freight and passenger lift, and is used in common by the various tenants: under such circumstances this staircase cannot be considered as a good means of escape, as the landings may be lumbered with goods. The fire risk inside such a staircase enclosure is considerable. To meet this risk a properly separated staircase is provided at the other extremity of the building, and as this staircase is used by the employés in entering and leaving the building, it has been found to be a satisfactory form of exit in time of emergency.

Fig. 24 shows a plan of a large manufacturing establishment in which many persons are employed. A party-wall with openings protected with doors divides the fire risk. Stairs entirely separated from the main building are constructed at each end of the block, and as an

emergency exit an external iron fire-escape is provided in the centre of the building, approached by balconies from windows on either side of the party-wall.

Fig. 25 illustrates some of the exit stairs provided on one side of a large store building in Philadelphia. Here balconies extend for a considerable distance along the front communicating with two isolated stairways delivering directly at pavement level. On this frontage the whole of the windows are glazed with wired glass and further protected by sprinklers attached to each window-head.

The Building Department in Philadelphia have under consideration a specification governing the construction of these tower stairways by which an objectionable constructional detail in some of these staircases will be rectified. In one of the large factories a false alarm of fire was raised, and, as the door leading into the staircase opened directly opposite the balustrade around a central well-hole, the employés were crowded together at this point, and about twenty or more were trampled to death or hurled over the balustrade down the well-hole.

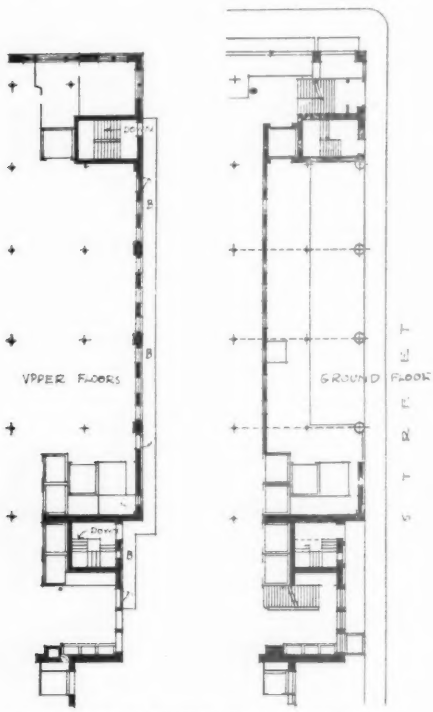



FIG. 25.—PLANS OF ESCAPE STAIRS AT A PHILADELPHIA DRY GOODS STORE.

B, External Iron Balconies.

The doors giving access to all such stairs should be planned so as to open opposite the downward flight, and so as not to interfere with the passage of persons down the staircase.

In many buildings, such as hotels and stores, the existence of exits, staircases, fire-escape, &c. is prominently announced by placards and illuminated signs. In all buildings in which persons are employed, or to which the public have access, it seems absolutely essential that specific directions should be given as to the lines of escape. The risk of panic is increased by ignorance of the direction and position of the means of escape.

I submit the following conclusions :—

1. American opinion demands that adequate fire protection for life should be provided in all buildings, irrespective of size and occupation. If a building be structurally unsafe for occupation, it is pulled down ; if it be insanitary and the defects are not made good, it is declared unfit for habitation ; and if it be used for illegal purposes, it becomes a public nuisance and is closed up. The question in these cases is not as to the number of persons who may be injured if the building should fall, or may be affected by its condition. I recommend that the fire risk to life should be considered upon somewhat similar lines. The law should not permit a person to expose himself or those within his premises to a preventable risk from fire. Further, in every respect fire is a public danger, whereas a ruinous or insanitary building may only affect the welfare of private individuals. As is well known, fines are sometimes inflicted for permitting a flue or chimney to become ignited. This, to a large extent, affects the occupants of the poor and ill-constructed dwellings only. The occupants of extensive premises, who, by indifference to fire risk and by reckless proceedings, may originate a huge conflagration, should not be

unrestrained by the authorities, especially when, in addition to the destruction of property, lives are jeopardised.

2. All important American buildings are constructed of fire-resisting materials, and the majority of ordinary buildings are by law compelled to be constructed in a similar manner. It is frequently contended that in England financial considerations debar this form of construction, and that were it compulsory rents would be prohibitive, and that property would be depreciated in value. While, to a large extent, the cost of construction, especially in the case of the poorer type of dwellings, would be increased, the actual increase in practice would not be great. Many simple methods of fire-resisting construction for floors, roofs, &c. are available. They could be adopted with ease and economy were their use compulsory.

3. I recommend that the height of buildings should be limited. The American "sky-scraper," although a financial success, is an eyesore to a city and a menace to public health and safety.

Financial reasons should not have such weight as to enable property owners to erect their buildings to an unlimited height, nor should the measure of the public fire brigade service alone reduce the height of buildings to an unprofitable minimum. The height of a building should be regulated primarily upon sanitary lines. The New York State Tenement House Law limits tenement houses to a height not exceeding one and a half times the width of the streets on which they front. It is reasonable to suggest that, as many persons pass the larger portion of their lives within the precincts of factory and commercial premises, such premises should be provided with a measure of light and air at least equal to that demanded for tenement houses.

4. I recommend that buildings should also be restricted in floor area. It is suggested that 5,000 feet should be the general limit of undivided floors. Increase beyond this should only be permitted where special business requirements absolutely demand it.

There are many establishments, such as drapery houses, which need special attention as regards fire risk. The floors are filled with loose inflammable goods, and at certain seasons the premises are packed with customers. A fire alarm would create a panic, and disaster would probably ensue unless those in the building were at once led into the open air or into another part of the premises unaffected by smoke or flame. It is a question whether any practical staircase could be planned to cope adequately with a sudden rush upon the level of, say, 500 persons.

Inflammable goods should also be guarded by automatic water sprinklers or similar devices. These appliances will retard a fire if they do not entirely quell it, and in this way they directly protect those persons who through injury or incapacity have been unable to avail themselves of the ordinary exits.

5. I suggest that every precaution should be taken to prevent fires spreading beyond the floor in which they originate. Well-holes, lifts, skylights, and other "flues" throughout a building should be completely protected. Wire-glass is now a practical commodity, and windows and skylights are not now the same element of risk as hitherto.

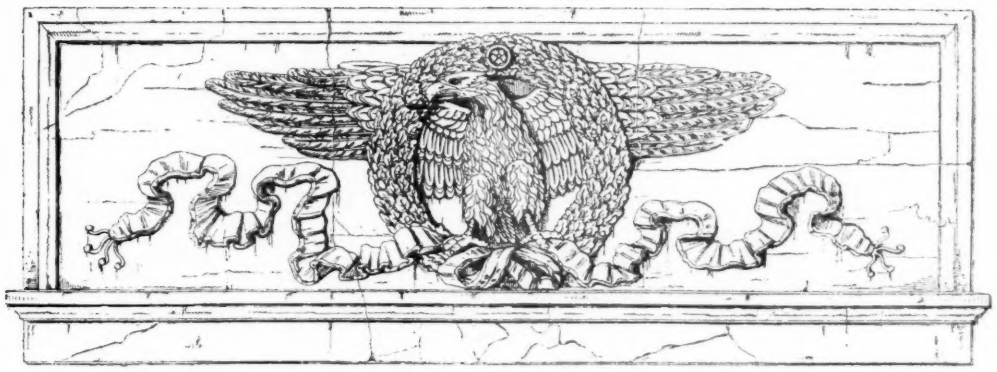
Lift doors should be so arranged that they cannot be left open by carelessness or accident. Stairs should be entirely cut off from the main building, not alone in order to prevent fire and smoke ascending and attacking the upper floors, but mainly in order to secure under every circumstance clear lines of exit.

6. American opinion is in favour of a form of escape in case of fire which leads persons outside the burning building; a division wall is an admirable contrivance, even though the means of escape on either side are in themselves indifferent. Where this is impossible, staircases are the only practicable form of escape. Ropes, ladders, and shoots are dangerously

impossible substitutes for staircases. The staircases should be against outside walls, and should be so planned that they may not be attacked by flame or smoke in the event of a fire within the building to which they belong. I suggest that the staircase as adopted in Philadelphia, and indicated in Figs. 22, 23, 24, and 25, fulfils all requirements upon this head. They should have straight flights and handrails, and the approaches should be such as to allow rapid and easy exit.

7. Many practical men contend that staircases for the above purposes should not exceed 3 feet 6 inches in width. This width permits the two lines of persons to descend rapidly, aided by the handrails on either side. A third line of persons in a wider staircase without the aid of a handrail is a danger. Staircases should be provided so that no person escaping is compelled to travel on any floor level more than the distance, viz. 100 feet. For practical purposes the number of persons for which a staircase is available as an escape on an emergency is regulated by the number it can contain within its enclosure from top to bottom. Thus in a story 15 feet high a staircase 3 feet 6 inches in width would accommodate about 100 persons upon the steps and landings. These persons could be employed in a factory upon a floor space of 2,500 feet. It therefore appears that a building should possess at least one such main exit staircase for each 2,500 feet of area. In less crowded buildings than factories these figures will of course be modified.

In conclusion I suggest that fire protection is a wise and profitable investment for the employer of labour, as well as for the property owner. For the city it implies a small but efficient fire brigade, while for the community at large it provides relief from a most terrifying danger.



# CAMILLE ENLART ON ECCLESIASTICAL ARCHITECTURE IN FRANCE.*

By Professor Baldwin Brown, M.A. [*H.A.*]

THE volume before us in its size and appearance recalls a very old friend, the *Abécédaire* of Arcisse de Caumont. That part of de Caumont's work devoted to "Architecture Religieuse" covered the same ground that is now surveyed by M. Enlart. It was published under the title of *Abécédaire, ou Rudiment d'Archéologie* in 1850, though the matter contained in it had been put forward in some tentative shape by the author a quarter of a century earlier. De Caumont's work was epoch-making. He embraced in a single survey the monuments, civil and military as well as religious, of all periods of the older history of France, and with sundry fellow-workers, whom M. Enlart praises in his preface, he established the scientific study of the national antiquities on a firm footing.

M. Enlart's book, it has just been said, reminds the reader at once of de Caumont's *Abécédaire*: the size, the paper cover, the look of the work when opened are the same; but it represents the result of half a century's further labour at the science which de Caumont did so much to establish. It is an original and independent production differing in extent and in contents from its predecessor, though formed to a certain degree on the same lines. The older work embraced in the single volume church fittings and decoration as well as architecture. M. Enlart promises us an additional volume on "le mobilier, le costume, la statuaire, la peinture, et l'iconographie," and in the present volume of 800 pages only touches on those fittings which have so intimate a connection with the fabric of a building that they must be taken into account before the building can be fully treated. Hence the complete manual when it appears will be a production of considerable bulk, and will contain the latest word on many archæological questions other than those strictly within the domain of architecture.

For M. Enlart's work is a mine of information, a book to possess and to refer to on all questions relating to the religious architecture of France and the countries most closely in contact with France. The full bibliographical appendices, and the number of examples quoted in his notes as illustrating this or that special scheme or feature, are evidence of the thoroughness of his survey, and he presents his readers with an immense body of architectural facts, clearly and carefully stated, such as are nowhere else to be obtained. It is at the same

* *Manuel d'Archéologie Française*, Première Partie, Architecture. Par Camille Enlart. I. Architecture Religieuse. Paris: Picard, 1902.

time a book for students rather than for the general reader. It presents a type of the book architectural of a kind for which in this country there is little encouragement. Abroad, in France and Germany, the archæology of the arts is a subject of serious and systematic study in schools and seminaries, where it is taught as regularly as if it were engineering or natural philosophy. With us these archæological studies are generally taken up later in life as a matter of personal taste and penchant, and pursued in a more independent fashion. The ultimate result in our own case is often as good as the product of Continental education, but the British archæologist, as it were, *grows*, while in France and Germany archæologists are made. There is accordingly a demand on the Continent for solid business-like handbooks for the student which appeal to a distinct learned class. How impossible, for example, would be in Britain the publication of such a work as the *Kunstdenkmäler der Rheinprovinz*, now publishing at Düsseldorf under the general editorship of Paul Clemen. Here a systematic survey is offered of all the mediæval monuments in a large district of exceptional artistic wealth. All the churches and other old-time buildings of any interest are described and figured, while there is appended a summary of all available documentary evidence bearing on their history. Graceful little vignettes of picturesque "bits" give the work artistic charm. For a treatise on so large a scale, and so serious and scholarly, it would be hard in this country to find support.

To this type of work belongs M. Enlart's *Manuel*. The general reader will miss in it the large page, the artistically wrought illustrations, the literary excursions, the note of personal predilection, to which we are accustomed in our more outwardly attractive architectural volumes. It is when from the position of the general reader he advances to that of the serious searcher after truth that he will realise the high value of this very important contribution to architectural literature.

It is, of course, impossible to follow the author into the ramifications of his work, or to discuss the numerous topics of interest which strike the reader during its perusal. A general idea of the contents of the volume may first be offered, while some views of the writer which invite criticism may subsequently be discussed.

The first chapter, entitled "Définitions et Principes," contains a useful explanation of architectural forms with the technical terms applied to them. For the word "ogive," it may be noted, M. Enlart repudiates the sense of "pointed arch" which de Caumont had applied to it, and with him, as with the French archæologists of the day in general, "voûte d'ogives" means a ribbed vault. The rib he derives (p. 38) from Roman work, and states, without referring to examples, that the Romans sometimes marked the groins of their intersecting vaults with "nervures saillantes" (p. 443), generally of plaster (p. 38). The undergirding ribs of Roman barrel vaults, copied in the Romanesque barrel vaults of the South of France, are surely more likely models for the Gothic rib than these plaster nervures, which we confess never to have come across.

In regard to proportions he makes the sound remark that "l'art libre et raisonneur du moyen âge n'a pas de modules." The scale in Gothic is the scale of nature, its unit the human form. Formulas and geometrical schemes are the marks of an art in its decadence.

A particularly interesting section of this preliminary chapter is that entitled "Habitudes et Condition des Artistes au Moyen Age." In the Romanesque period the monks, in the Gothic the bishops, took the lead, and under the latter worked master-masons and "maîtres d'œuvres," who organised their "chantiers" and directed the labours of large bodies of trained stone-cutters. "The master of works or mason," writes M. Enlart, "exercised at will all the functions which are now divided among engineers, architects, draughtsmen, labourers, and contractors. It depended, as a rule, on the convenience of their clients whether they performed

all these functions at once, or effected a division of labour." The appellations in use for the various adherents of the building craft, at a time before the word "architect" was introduced, make an interesting collection, but one of the most characteristic is omitted. Early in the eleventh century Dudo de St. Quentin writes of a building expert consulted by Duke Richard I. of Normandy as "petrarum faber architectoriâ arte peritus," and at this period the expression "architectoria ars" is certainly noteworthy. Some technical discussions, and a very sensible note on the use and abuse of literary evidence for dates, recalling a paper of no very distant date in the JOURNAL R.I.B.A.,* bring this introductory chapter to a conclusion. There is perhaps a too optimistic ring about the prophecy with which it ends, to the effect that "a thorough and attentive examination, a study guided by sound criticism, will almost always resolve the more or less complex problems presented by ancient buildings."

Chapter II. is on the Roman and the Merovingian periods, and is, of course, more archæological than artistic in character. We note with some surprise that the author seems still to believe in the legend of the systematic conversion of Gaul in the third century by seven bishops, formally commissioned by the See of Rome. This is only one degree more credible than our own now exploded Lucius-Eleutherus fable. The oldest church in France M. Enlart believes to be the so-called baptistry, restored by some as an old entrance gateway,† like that at Lorsch, dedicated to St. John at Poitiers, and he ascribes this to the sixth century. The crypt of Jouarre is of the seventh. The crypt or chapel of St. Mellon at St. Gervais, outside Rouen, commonly reckoned Gallo-Christian, M. Enlart dates, on the strength, no doubt, of the capitals of the columns of the exterior arcading, in the tenth century. The Basse-Œuvre, Beauvais, was built by Bishop Hervé at the close of the tenth century. Vieux-Pont-en-Auge is ascribed to the same date.

It will be seen from the above that M. Enlart belongs to the school the tendency of which is to date in late—or post—Carolingian times many of the early French churches that have been claimed for a Merovingian or Gallo-Roman origin. There is, however, one consideration of some weight, based on comparative evidence, that inclines one towards the earlier epoch for this class of monuments. There is a style of work represented at St. Jean, Poitiers; Cravant; St. Christophe, Suèvres; Savenières (Maine et Loire), and other places, in which the facing, in the main of "petit appareil," is diversified by a studied mosaic, in which geometrical patterns are formed by zigzags, hexagons, herring-bone work, stars, &c. We can hardly help being reminded here of that sumptuousness in personal attire and accoutrement that characterised Merovingian princes and nobles, and it is noteworthy that this elaborate facing is characteristic of the western part of the Frankish dominions. There are only two examples of it towards the eastern part, the so-called "Clara-Thurm" at Cologne, regarded as Merovingian, and the well-known little structure at Lorsch, near Worms, on the Rhine. About this M. Enlart adopts the old view that it was the mortuary chapel of Louis the German, dating from about 880. A visit to the building, or even a glance at the plan of it and of its surroundings, shows quite clearly that it was not a chapel at all, but a gate-house, giving admission to a court or atrium before the abbey church, the desecrated remains of which are still extant. Dr. Adamy, who has published it, brings forward very strong evidence to show that it dates more than a hundred years earlier, or about 770, and that it was erected under influence from the western, or Neustrian, part of the Frankish empire, so that it would represent the same tradition as Cravant or St. Jean, Poitiers. Now it is a fact that none of

* On the Comparative Value of Documentary and Architectural Evidence in establishing the Chronology of the English Cathedrals. By Francis Bond, M.A. JOURNAL R.I.B.A., 26th November 1898.

† *Die fränkische Thorhalle zu Lorsch.* Darmstadt, 1891.

the known Carolingian buildings from the minster at Aachen downwards exhibits the decorative facing, though if it were Carolingian we should certainly expect to find it there, or on the basilica of Eginhard at Michelstadt in the Odenvald, or in Reichenau, or at Werden, or any of the other datable buildings of the true Carolingian time. Why, if Cravant, &c., are Carolingian do we not find this same technique in German examples of the same epoch? If, on the other hand, the decorative facing represent a tradition older than Carolingian times the anomaly is explained.

There follow next in the book two full chapters, of more than two hundred pages each, on the "période romane" and the "période gothique," each closed by an extended bibliography and list of examples. The list of Gothic churches covers by itself thirty-six pages, and this is only an illustration of that conscientious thoroughness which is the outstanding characteristic of M. Enlart's work. The usefulness of the book to the genuine student, for whom we have already shown it to be intended, would have been largely increased if it had possessed an index. This want of an index is a great practical defect in a work designed for reference not mere perusal. In reading the work straight through, innumerable remarks about innumerable buildings strike the eye and are vaguely remembered. In the absence of an index it is often difficult and always wasteful of time to hunt up again the particular reference that we want to re-peruse or verify. Failing an index, it would have been of no little help had the list of examples at the end of each chapter contained references in brackets from the name of each monument mentioned in the text to the page where the notice would be found.

No analysis of these long chapters containing more than half the book can be attempted here. All students of the architectural periods they cover will readily recognise their value, though this would be greatly increased, as we have just seen, by facilities for reference. The general reader, whom it is not well, even in a scholarly work, to ignore, will be inclined to offer a criticism from the point of view of literary effect. Viewing, not these two chapters alone, but the work as a whole, and with a full recognition of the severely scientific aim of the writer, the reader will yet point to a certain want of accent in the treatment, tending to reduce the contents of the book to a vast collection of co-ordinate facts each one of which has much the same importance as all the rest. There is a want of relief and a somewhat prosaic sameness throughout the chapters that might have been avoided had the author indulged himself and his readers in a literary treatment of some of the topics, or brought out into greater prominence some specially important movements or periods. The impression one derives from a perusal of the pages is that the number of facts at the disposal of the author was so great that he had to prune away all literary adornments, and make his statements, whatever their relative importance, equally concise.

For example, readers who remember a brilliant chapter in the *Art Gothique* of Louis Gonse will turn to M. Enlart's pages expecting to find some general appreciation of the age that saw the birth of Gothic, some sketch of the moral, social, and intellectual forces that were stirring in the world of the times. The subject is, however, dismissed in half a page, and we are taken on at once to the schools of Gothic, to its reception abroad, and then to the monuments. We receive little aid towards forming a just idea of what a Gothic monument is in its essential character, as apart from this or that particular type or example.

Again, when dealing with that very large and important subject the schools of Romanesque the author indulges in no excursus, but characterises each school in France and abroad in a few clear and well-chosen words and passes on.

In connection with the growth of the Romanesque style out of the early Christian it is natural to turn to see what the author has to say about those early Merovingian churches at

Tours, Clermont, and elsewhere, known only from descriptions, which appear to have shown innovations on the simple basilican form, similar to those our own Wilfrid seems to have made in his churches at Hexham. The buildings are mentioned in the *Manuel*, page 122 *f*, but on a moment in architectural history so interesting we would have welcomed a digression.

M. Enlart would no doubt reply that the scheme of his book did not lend itself either to literary disquisitions or to the discussion of monuments the restoration of which must necessarily be problematical. Allowing this, it must at the same time be pointed out that a flat treatment comes dangerously near to dulness, which in a subject such as the development of Christian architecture should at all hazards be avoided.

M. Enlart, with that sincerity and love of truth by which he is distinguished, invites criticism in view of a second edition. We have already pointed out the need for an index, and may add here a few words of criticism on one aspect of his general treatment of mediæval art.

The author shows the eminently sane and practical character of his mind in his refusal to be led away by any of those semi-mystical notions which have done much to obscure architectural history. He repudiates, for example, p. 60, the idea of a symbolic use of geometrical figures in the ordinance of the form of churches. "Lorsque nous découvrons des figures dans la lune et dans les nuages, c'est nous qui les mettons." We are glad to see also, p. 91, that he rejects the somewhat fanciful hypothesis that Western Romanesque was in any respect directly inspired by the early Christian monuments of Central Syria. On the other hand, M. Enlart is not emancipated from a curious preconception, very common among his countrymen, that consists in a kind of obsession with the idea of Byzantine influence, which is seen sometimes in the most unlikely quarters. The Germans have for the most part got rid of this preconception which was once almost universal, and Schnaase's epoch-making chapter on the "Byzantine Question" in his *History of the Arts of Form* has given Teutonic scholars a wholesome scepticism about the dependence of Western art upon this far-off and semi-mythical source of influence. In the department of "Kleinkunst" Byzantine-carved ivories, enamels, and other portable objects were certainly carried into the West and affected native production, but the influence of Byzantine architectural models has been much exaggerated; and as for monumental sculpture, after the iconoclastic movement this did not exist at all in the Eastern Empire, and so cannot well have affected Western carving. St. Mark's at Venice may be Byzantine, and the domes of Périgord are Byzantine in form, though, as Dehio has shown, they are not constructed according to Byzantine technique. One theory of the origin of the cubical cap, so characteristically German, derives it from Byzantium, and if the "cistern of the thousand columns" at Constantinople, which shows the form, be, as its latest investigator believes, of the time of Justinian, the above theory would be greatly strengthened. On the other hand, to call the minster at Aachen "Byzantine" or "Oriental" is surely quite unnecessary.

M. Enlart (p. 175) speaks of the early vaulted churches of Western Europe as "imitées des églises voûtées de l'Empire de l'Orient," and specially singles out as Byzantine the Aachen Rotunda. This is, of course, modelled on San Vitale at Ravenna; but the assumption that San Vitale is Byzantine is quite gratuitous. It was begun in 526 * under Gothic rule, though finally completed after the transfer in 539 of the political headship to Justinian. SS. Sergius and Bacchus at Constantinople was not put in hand till after San Vitale was begun; Sta. Sophia till the latter was nearly finished; while, on the other hand, the elements out of which the scheme of San Vitale is formed existed already in the West, as at Sta.

* The dates are given in Mothes, *Die Baukunst des Mittelalters in Italien*. Jena, 1884, p. 214.

Costanza by Rome and San Lorenzo at Milan. The central plan and the dome were in the earliest Christian epoch as much Western as Eastern forms, and it was only after Justinian that the specifically Byzantine architectural style was established. Even after this definite creation of the Byzantine style, it is very hard to find any real evidence of its influence on Western buildings. Bishop Meinwerk, of Paderborn, early in the eleventh century was said to have erected his chapel, which still exists north of the Dom, "per Græcos operarios." It is true that the vaults of the chapel are domical, but the capitals of the shafts from which they rise have nothing Byzantine about them, but are just examples of the debased composite capitals not unknown in early German Romanesque.

In view of the fact that the theory of Byzantine influence when subjected in special instances to criticism so often breaks down, we would suggest a reconsideration of some of the passages in the *Manuel* where Western forms are explained by Oriental derivation. The general view of the author is expressed in the words (on p. 108) "after the fall of the Empire of the West the Western people sought their models and their inspirations in the still flourishing Empire of the East," and we cannot but think that the sentence is a very misleading one. One or two examples in which this predilection seems to have warped his judgment are subjoined.

M. Enlart justly characterises Byzantine carved ornament as exhibiting a graphic rather than a plastic character (p. 355 *f*), but when he finds the same character both in Carolingian and in Arab art, which he says "issue from Byzantine," we cannot but feel that he is coupling together two very different kinds of work. Arab ornament, it is true, is graphic like Byzantine; but early Romanesque carving in the West is often very full and plastic in feeling. The fact that, as Springer showed long ago, the Western carver borrowed fantastic animal motives and monsters from Oriental textiles does not make the style of his carving Byzantine. The interlacing patterns common in early Romanesque decoration in the West were very likely derived from the guilloches in Roman mosaic pavements; but the fact that the guilloche is ultimately to be traced back to old Mesopotamian art does not make Oriental the interlacing patterns as we find them in Western Romanesque. In the sentence (p. 201), "The South of France, richer in débris and in traditions of the Roman epoch, and in more intimate contact with Byzantine sources, produces at times sculpture of fair merit, and ventures to attempt the rediscovery of the statuary's art," we would ask M. Enlart why Byzantine need be brought into the question at all. Anything less Byzantine than the Romanesque sculpture of Provence cannot well be imagined; and, moreover, it could not be influenced from Byzantium, for the simple reason that figure sculpture on a monumental scale was not there practised.

There is no space for any further discussion of points on which statements in the book before us might be questioned. We take leave of it with cordial congratulations to the accomplished author on the satisfactory accomplishment of the most important part of his allotted task.

9, Conduit Street, London, W., *6th Dec.* 1902.

# CHRONICLE.

## THE NOVEMBER EXAMINATIONS.

### The Preliminary: Newly Registered Probationers.

The Preliminary Examination, qualifying for *Probationership R.I.B.A.*, was held in London and the undermentioned provincial centres on the 4th and 5th November. Of the 163 candidates admitted, 54 were exempted from sitting, and 109 were examined, with the following results:—

| Centre | Number Examined | Passed | Relegated |
|---|---|---|---|
| London | 61 | 39 | 22 |
| Birmingham | 13 | 10 | 3 |
| Bristol | 5 | 3 | 2 |
| Leeds | 10 | 7 | 3 |
| Manchester | 13 | 10 | 3 |
| Newcastle | 7 | 6 | 1 |
| | 109 | 75 | 34 |

The passed candidates, with those exempted—129 altogether—have been registered as Probationers. The following are their names and addresses:—

ALLEN: Newstead Adams; Bisley Road, Stroud, Gloucestershire [*Master*: Mr. G. P. Milnes].

ANDREW: Alexander; 38, Kay Park Crescent, Kilmarnock, Ayrshire, N.B. [*Master*: Mr. John B. Wilson*].

ATTLEE: Thomas Simons; Westcott, Portinscale Road, Putney, S.W. [*Master*: Mr. C. E. Barry*].

BAIRD: William; Cranstone Hotel, Southampton Row, W.C. [King's College].

BARLEY: Thomas Wrigley; 5, Park View, Monton, Eccles, nr. Manchester [*Master*: Mr. John Gibbons].

BARNISH: Leonard; 25, Aughton Road, Birkdale, Southport, Lancs. [*Masters*: Messrs. Deacon & Horsborough].

BARRY: Harold Douglas; Ightham Rectory, Sevenoaks, Kent [*Master*: Mr. H. P. Monckton*].

BINNING: Alan; 101, Shooters' Hill Road, Blackheath, S.E. [*Masters*: Messrs. William Wallace & Gibson*].

BLACKSHAW: Warren, jun.; Goytholme, Brinnington, Stockport [*Master*: Mr. C. R. Locke].

BLUHM: Quentin Mangnall; Glencoe, St. Anne's-on-the-Sea, Lancs. [*Master*: Mr. Edward Hewitt*].

BOOTH: Kenneth Williams; 172, Lewisham High Road, Brockley, S.E. [*Masters*: Messrs. Edward Hide & Son].

BOWER: Albert Egerton Lance; Warren Road, Blundellsand, Liverpool [*Master*: Mr. Arnold Thornely*].

BROAD: Frederic Arthur; Manton Villa, Oxford Road, Bournemouth [*Master*: Mr. Frederic Broad].

BROOKSBY: Frank; 5, Shaftesbury Terrace, Wellington, Salop [*Master*: Mr. C. R. Dalgleish].

BRYAN: Arthur Francis; The Limes, Willoughby, Waterless, Lutterworth [*Master*: Mr. William M. Cowdell].

BULLOCH: Archibald; 99, Amesbury Avenue, Streatham Hill, S.W. [*Master*: Mr. J. Findlay].

CABRE: José Watson; 38, Thackeray Street, Princes Road, Liverpool, S. [University College, Liverpool].

CAINE: Allen Flinders; 33, Buckland Crescent, Belsize Park, N.W. [*Master*: Mr. R. Frank Atkinson].

CLARK: Duncan Walter; 2, Amyand Terrace, Richmond Road, Twickenham [*Master*: Mr. Howard Goadby].

CLARKE: Godfrey L.; The Vicarage, Steeton, Keighley [*Masters*: Messrs. Bedford* & Kitson].

CLARKE: Nevile Simpson; Summerville, Westwood, Beverley [*Masters*: Messrs. Botterill, Son, and Bilson*].

COLLINGS: Harry; 93, Victoria Road, Scarborough [*Master*: Mr. James Petch].

CORFIELD: Claud Russell; 62, Stanmore Road, Edgbaston, Birmingham [*Masters*: Messrs. Ewen Harper & Bros].

CRUMMACK: Reginald Harker; 11, Albion Terrace, Hartlepool [*Master*: Mr. Harry Barnes*].

DAVIS: Claude William; Parklands, 288, Pershore Road, Edgbaston, Birmingham [*Masters*: Messrs. Crouch & Butler].

DEMPSTER: Stanley Matcham; 17, Ossington Street, Bayswater [*Master*: Mr. C. Stanley Peach*].

DICKINSON: William Francis; 162, Buckingham Palace Road, S.W. [*Master*: Mr. A. J. Bolton*].

DREWITT: Colin Minors; 11, Bath Street, Southport, Lancs. [*Master*: Mr. G. S. Packer].

EMERSON: Harry Valentine Milnes; 11, Haydon's Park Villas, Gap Road, Wimbledon, S.W. [*Master*: Mr. W. W. Eldridge].

EMERY: Harold Carpenter; 96, Denton Road, Hornsey N. [*Master*: Mr. George Hubbard*].

FAIRWEATHER: Clement Wilson; 3, Queen's Road, Newcastle-on-Tyne [*Master*: Mr. J. W. Dyson].

FOLLETT: Sidney George; 22, Fountainhall Road, Edinburgh [*Master*: Mr. Hippolyte J. Blanc,* R.S.A.].

FOSTER: Gains; 22, Wellesley Road, Ilford, Essex [*Master*: Mr. L. W. Robinson].

FRASER: Hubert Henry; Gauthorpe House, York [Uppingham School].

FULTON: Andrew Wilfrid; 68, Kingsley Road, Liverpool [University College, Liverpool].

GANDY: Edward Hall; 241, Tettenhall Road, Wolverhampton [*Master*: Mr. F. T. Beck].

GEORGE: Walter Sykes; 99, New King's Road, Fulham, S.W. [*Masters*: Messrs. Thomas George & Son].

GOLDIE: Joseph J.; 28, Nevern Square, Earl's Court, S.W. [*Master*: Mr. Edward Goldie].

GOVAN: James; Main Street, Wishaw, Scotland [*Master*: Mr. James Cowie].

GRANT: James Hubert; 21, Chapel Street, Hyde, Cheshire [*Master*: Mr. Ernest Woodhouse].

GRANT, Thomas Francis Wiltshire; The School House, Felstead, Essex [Felstead School].

HACKING: Edward Hartley; 50, Blackfriars Street, Manchester [*Master*: Mr. N. Hartley Hacking].

HAMPTON: Clarence Lambert; Oxford Lodge, Wimbledon Common, S.W. [*Masters*: Messrs. George Hubbard* & Albert W. Moore].

HART: William Kingsford; Oxford House, St. John's, Wakefield [Wakefield Grammar School].

HARVEY: Edwin Harry; 30, Bradford Road, Southsea [Technical Institute, Portsmouth].

HAWKES: Reginald Wilson; Engadine, Stratford-on-Avon [*Master*: Mr. E. G. Holtom.

HELM: William Frederick; Victoria Road, Woolston Hants [*Master*: Mr. Charles H. Brightiff].

HEPBURN: James William; 4, Camden Street, N.W. [*Master*: Mr. James Lindsay *].
HILL: Dennis; 27, Pattenden Road, Catford, S.E. [*Masters*: Messrs. C. S. Peach * & C. H. Reilly *].
HILLERNS: Oswald Hero Wilhelm; Oldenburg Villa, Hessle, E. Yorkshire [*Master*: Mr. B. S. Jacobs].
HODGSON: Frederick John Whitlock; Fairlea, Avenue Road, Bournemouth [*Master*: Mr. W. Hargreaves Bourne *].
HOLBROW: Alfred Ernest; 10, Clarendon Gardens, Maida Hill, W. [Polytechnic School of Architecture].
HOLLAND: Thomas; c/o. Ernest Oxley, Esq., Architect, Clay Cross [*Master*: Mr. Ernest Oxley].
HONEYBURNE: Ernest Hardy; 23, Duke Street, Southport [University College, Liverpool].
HOY: Percy Cartwright, Fern Cliff, Heaton Mersey, nr. Manchester [*Masters*: Messrs. Woodhouse * & Willoughby *].
HUDSON: Harry; Westfield House, Shipley, Yorks. [*Master*: Mr. A. Ryshworth Hill *].
IOTHAM: George Francis; Sandwich School, Kent.
JENNINGS: Samuel David; 8, Anderton Road, Sparkbrook, Birmingham [King Edward's Grammar School].
JOHNSTON: Charles; 163, Grosvenor Road, Westminster, S.W. [*Master*: Mr. A. M. Fowler].
JONES: Jacob Herbert; 6, Priorton Terrace, Swansea, South Wales [*Master*: Mr. Charles S. Thomas].
JORDAN: Richard Thomas William; 38, Tyne Street, North Shields [*Master*: Mr. Geo. R. Smith *].
KAY: George Alexander; Victoria Chambers, Parliament Street, Ramsey, Isle of Man [Ramsey Grammar School].
KELLETT: James; Wyke House, Castle Bar Hill, Ealing, W. [*Masters*: Messrs Barrow * & Brown].
KIRBY: Archibald; Woodview, Hempstead Road, Watford [*Master*: Mr. Henry A. Saul *].
KNIGHT: John; Fern Lea, Seedley Road, Pendleton, Manchester [*Masters*: Messrs. Whitelegg & Whittaker].
LAMB: Charles Alfred; 189, The Grove, Hammersmith [Polytechnic, Regent Street].
LAMONT: Alexander Hay; 24, Millar Crescent, Morningside, Edinburgh [*Master*: Mr. George Craig].
LAWTON: Robert Allison; 4, King Street South, Rochdale [*Masters*: Messrs. Potts,* Son,* & Hennings *].
LEMAN: Alexander Joseph Leonard; Netherton House, Old Town, Clapham, S.W. [*Masters*: Messrs. Searle * & Hayes *].
LEONARD: Frederick George; High View, Maidstone Road, Chatham [*Master*: Mr. George E. Bond].
LEWIS: John Norman; 22, Great George's Road, Waterloo, Liverpool [University College, Liverpool].
LOWICK: Henry Capell; Little Brington, Northamptonshire [*Master*: Mr. M. H. Holding *].
McDONNELL: Frederick Hugh; Afton Lodge, 95, Windsor Road, Forest Gate, S.E. [*Master*: Mr. A. H. Kersey *].
MACLAREN: Henry Stewart; 5, Tivoli Crescent, Brighton [*Master*: Mr. J. G. Gibbins *].
MANN: William Robert; 8, Gordon Avenue, Leicester [*Masters*: Messrs. Goddard * & Co.*].
MARGARY: Herbert Young; 9, Dafforne Road, Upper Tooting, S.W. [*Master*: Mr. G. A. T. Middleton *].
METCALFE: Cecil Broadbent; 23, St. Andrew's Place, Bradford, Yorks. [*Masters*: Messrs. W. J. Morley * & Son].
MILBURN: William, jun.; 8, Thornhill Park, Sunderland [High School, Sunderland].
MILNE: David; 62, Sternhold Avenue, Streatham Hill, S.W. [*Master*: the late Mr. J. Murray Robertson *].
MUNDELL: James; 61, Grosvenor Street, West Hartlepool [*Master*: Mr. Harry Barnes *].
MURRAY: Colin Hay; 24, Gildrege Road, Eastbourne, Sussex [King's School, Canterbury].
NATHANIELSZ: Arthur Holman; 12, Arlington Street, Glasgow [Richmond College, Galle, Ceylon].
NEWBOLD: Harry Bryant; 31, St. James's Square, Notting Hill, W. [*Masters*: Messrs. Beazley & Burrows *].
NEWELL: Leopold Monk; Brooklea, Ledsham, nr. Chester [*Master*: Mr. Edmund Kirby *].
NEWSTEAD: Stanley Graham; 31, Kingswood Avenue, North Kensington [Polytechnic, Regent Street].
NICHOLLS: Leonard Sheldon; Glenthorne, 38, Thornhill Road, Handsworth, nr. Birmingham [*Master*: Messrs. Gateley & Parsons].
OLIVER: Frederick George; Embleton House, Tweedmouth, Berwick-upon-Tweed [*Masters*: Messrs. James Stevenson & Son].
PALMER: Herbert Alfred; Clarence Villa, Chapel Street, Petersfield [*Master*: Mr. H. T. Keates].
POMPHREY: Thomas Canfield; Maylea, Park Street, Wishaw, N.B. [*Master*: Mr. Alex. Cullen *].
POOL: Stanley; 6, Hartington Street, Derby [*Master*: Mr. John Wills].
REIERSEN: Nils Olaf; 1, Colville Square, Bayswater, W. [*Master*: Mr. A. N. Prentice *].
ROBERTS: William Henry Ernest: Harmony House, Melody Road, East Hill, Wandsworth [*Master*: Mr. W. Henry White *].
ROBERTSON: Alan Keith; Wardie Bank, Boswell Road, Edinburgh [*Master*: Mr. Hippolyte J. Blanc,* R.S.A.].
RUNTZ: Ernest Munro; Kingston Manor, Lewes, Sussex [*Masters*: Messrs. Ernest Runtz & Co.].
SAUNDERS: Raymond Alexander Richard; 73, Howell Road, Exeter [*Masters*: Messrs. Tait * & Harvey].
SHAFT: James Walter; Rival Lodge, Harting, Petersfield [*Master*: Mr. J. W. Walmisley *].
SHAW: William Gordon; The Griffin, Witton, Blackburn, Lancs. [*Master*: Mr. Arthur R. Gradwell].
SHIELD: Cyril Ridley; 47, Westmoreland Road, Bayswater, W. [*Masters*: Messrs. Brown & Barrow *].
SHINER: Laurence Alexander David; 6, Orsett Road, Grays, Essex [Palmer's School, Grays].
SLEIGHTHOLM: George Edward; 124, Prospect Road, Scarborough [*Master*: Mr. H. Ascough Chapman *].
SMITH: Frederick Radford; 62, Queen's Road, Leeds [*Master*: Mr. William Bruce].
SPENCE: Herbert Marshall; Bank House, North Shields [*Masters*: Messrs. Liddle & Browne].
STEPHEN: Harry; Bedford Vicarage, Leigh, Lancs. [*Masters*: Messrs. Banks, Fairclough & Stephen].
SULLIVAN: Basil Martin; 8, Quarry Road, Hastings [*Master*: Mr. M. Sullivan].
SURMAN: John Burgess; 10, Yew Tree Road, Edgbaston, Birmingham [*Masters*: Messrs. C. Whitwell & Son].
SUTCLIFFE: William; 37, Pavement, Todmorden [*Masters*: Messrs. Sutcliffe & Sutcliffe].
SWAN: Thomas Aikman; 7, Sylvan Place, Edinburgh [*Masters*: Messrs. Hamilton, Paterson, & Rhind *].
SYMES: William Charles; 7, Bideford Mansions, Rosebery Avenue, E.C. [*Master*: Mr. George Hubbard *].
SYMINGTON: Herbert Andrew; 18, Lincoln Street, Leicester [*Masters*: Messrs. Goddard * & Co.].
TODD: William James Walker; 6, Comely Bank Road, Edinburgh [*Master*: Mr. T. P. Marwick *].
TOMLINSON: John William; 22, Starley Road, Coventry [*Master*: Mr. Herbert Walker *].
TRYON: Wyndham Hugh Christopher; Down Hall, Epsom, Surrey [Charterhouse].
TYLER: George Cecil; Send Lodge, Send, Surrey [*Masters*: Messrs. W. G. Jones & Clinton].
UNSWORTH: Gerald; 23, Buckingham Palace Road, S.W. [*Master*: Mr. F. T. Baggallay *].
WARDER: Richard Oliver; London House, Erdington, nr. Birmingham [*Masters*: Mr. J. A. Chatwin * & Son].

WATERMAN: Frederick; Ivy Bank, Crown Hill, Norwood, S.E. [*Master*: Mr. A. Burnell Burnell *].
WEASER: Lawrence Thomas; 92, Rendlesham Road, Clapton, N.E. [*Masters*: Messrs. John Young, Son, & Johnson *].
WEBB: Maurice Everett, B.A., Cantab.; 1, Hanover Terrace, Ladbroke Square, W. [*Master*: Mr. Aston Webb, A.R.A.*]
WHEATLEY: Joseph Horace Lineham; 48, Warrior Square, St. Leonards-on-Sea [St. Mary Magdalen School].
WHITE: Percy Gordon; Wakehurst, Highland Road, Bromley, Kent [Architectural Association Day School].
WILLIAMS: John Hugh; 2, Craven Terrace, Leeds, Yorks [*Master*: Mr. W. G. Smithson *].
WILLIS: Walter Stanley; 71, Stanley Street, New Clee, Great Grimsby [*Master*: Mr. J. J. Cresswell *].
WILSON: Herbert John; Brinkdale, Park Road, Peterborough [*Master*: Mr. William Boyer].
WRIGHT: Arthur Edgar; 80, Durlston Road, Kingston-on-Thames [*Masters*: Messrs. Carter* & Ashworth *].
YOUNG: George; 16, India Street, Glasgow [*Masters*: Messrs. Thomas Dykes & Robertson *].
YOUNG: Robert Clifford; 2, Eastfield Road, Cotham, Bristol [Merchant Venturers' College, Bristol].
WESTWICK: Bertie Cecil; Hillcrest, Crow Hill Drive, Mansfield [*Master*: Mr. A. N. Bromley *].
WILLS: Gerald Berkeley; c/o Reginald Blomfield, Esq., 1, New Court, Temple [*Master*: Mr. Reginald Blomfield].

The asterisk (*) denotes members of the Institute.

### The Intermediate: Newly Registered Students.

The Intermediate Examination, qualifying for *Studentship R.I.B.A.*, was held in London and the undermentioned provincial centres on the 4th, 5th, 6th, and 7th November. Ninety-eight Probationers were examined, with the following results:—

| Centre | Number Examined | Passed | Relegated |
|---|---|---|---|
| London | 67 | 40 | 27 |
| Bristol | 5 | 3 | 2 |
| Glasgow | 6 | 5 | 1 |
| Leeds | 7 | 2 | 5 |
| Manchester | 13 | 4 | 9 |
| | 98 | 54 | 44 |

The successful candidates have been registered as Students. Their names, given in order of merit as placed by the Board of Examiners, are as follows:—

WARWICK: Septimus [*Probationer* 1897]; 98, Lancaster Road, N. Kensington, W. [*Master*: Mr. R. S. Balfour *].
PARKER: Alfred Gwynne [*Probationer* 1899]; 27, North Villas, Camden Square, N.W. [*Master*: Mr. S. B. Russell *].
WILLATT: Herbert Attenborough [*Probationer* 1901]; 4, Pelham Road, Sherwood Rise, Nottingham [*Master*: Mr. Watson Fothergill].
HANSON: George [*Probationer* 1901]; 28, Southfield Square, Bradford, Yorks [*Masters*: Messrs. Mawson & Hudson].
CLARKE: John Daniel [*Probationer* 1897]; 84, Lancaster Road, Notting Hill, W. [*Master*: Mr. Arthur Green *].
MYER: George Val [*Probationer* 1900]; 157, Sutherland Avenue, W. [*Master*: Mr. John Belcher, A.R.A.*].
FORSYTH: Charles [*Probationer* 1900]; 33, West Cumberland Street, Glasgow [*Master*: Professor Charles Gourlay *].
SHEBBEARE: Henry Vivian [*Probationer* 1898]; 4, South Bank Terrace, Surbiton [*Master*: Mr. Edward W. Mountford *].
QUIRKE: William Dathy [*Probationer* 1901]; 22, Oseney Crescent, Camden Square, N.W. [*Masters*: Messrs. Samuel Knight * & Parkinson].
FOSTER: Frank Burwell [*Probationer* 1901]; 4, Euston Place, Leamington Spa [*Master*: Mr. Frederic Foster].
DYKES: George [*Probationer* 1894]; Wiston, Holmhead Road, Cathcart, Glasgow [*Master*: Mr. T. L. Watson *].
WAGSTAFF: Alexander [*Probationer* 1901]; 42, Old Dunbarton Road, Glasgow, W. [*Master*: Professor Charles Gourlay *].
GOODWIN: Charles John [*Probationer* 1900]; 4A St. John's Road, Croydon, Surrey [*Master*: Mr. R. A. Crowley *].
WOODSEND: Henry Edward [*Probationer* 1900]; 16, Villa Road, Nottingham [*Master*: Mr. A. N. Bromley *].
LOVELL: Charles Ernest [*Probationer* 1900]; 66, Darnley Road, Gravesend [*Masters*: Messrs. Rayner & Bridgland].
LOVEITT: Rowland Arthur [*Probationer* 1900]; Ivy Villa, Hereford Road, Abergavenny [*Master*: Mr. T. Taylor Scott *].
RICHARDSON: Henry John [*Probationer* 1899]; Pine Hurst, Hollington Park, St. Leonards-on-Sea, Sussex [*Master*: Mr. P. H. Tree *].
HUTTON: David Bateman [*Probationer* 1900]; 184, Woodlands Road, Glasgow [*Master*: Professor Charles Gourlay *].
JOHNSON: George A. [*Probationer* 1902]; Stafford Lodge, Stafford Road, Croydon [*Master*: Mr. Paxton Watson].
PATERSON: Claude [*Probationer* 1900]; Dudley House, Bowdon, Cheshire [*Master*: Mr. John Brooke *].
DANIELL: George Francis Blackburne [*Probationer* 1901]; 19, Fopstone Road, S.W. [*Master*: Mr. Aston Webb, A.R.A.*]
HAYWOOD: William [*Probationer* 1899]; 54, Newhall Street, Birmingham [*Master*: Mr. W. H. Bidlake *].
CUMMING: Tarras Talfourd [*Probationer* 1899]; 7, Christ Church Gardens, Reading [*Masters*: Messrs. Charles Smith * & Son *].
LANGMAN: Herbert [*Probationer* 1901]; 29, Shakespeare Street, Southport, Lancs. [*Master*: Mr. Francis P. Halsall *].
DONNELLY: Robert [*Probationer* 1901]; Lower Martello Terrace, Holywood, co. Down [*Masters*: Messrs. J. J. Phillips & Son *].
SKINNER: Martin [*Probationer* 1898]; Kent House, Beckenham [*Master*: Mr. Sidney R. J. Smith *].
STRATTON: Percy Montagu [*Probationer* 1901]; Quidhampton, Salisbury [*Master*: Mr. A. C. Bothams].
CRAWLEY: Percy George [*Probationer* 1900]; Aboyne Lodge, Woodston, Peterborough [*Master*: Mr. William Boyer].
SAWYER: Harold Selwood [*Probationer* 1900]; 45, Jewry Street, Winchester [*Masters*: Messrs. Colson * & Nisbett *].
HOOPER: Basil Bramston [*Probationer* 1902]; 21, Crowhurst Road, Brixton, S.W. [*Master*: Professor Beresford Pite *].
SIFTON: Isaac Taylor [*Probationer* 1900]; 230, Goldhawk Road, W. [*Masters*: Messrs. Read * & MacDonald *].
AGUTTER: Edwin Albert [*Probationer* 1898]; 26, Great James Street, Bedford Row, W.C. [*Master*: Mr. John I. Lee *].

BEAUMONT: George Neville [*Probationer* 1899]; 38, Bond Street, Wakefield.
BRYDEN: Andrew Francis Stewart [*Probationer* 1894]; 11, Lynedoch Crescent, Glasgow [*Master*: R. A. Bryden *].
BULLOCK: Albert Edward [*Probationer* 1900]; 45, Fairlawn Avenue, Chiswick, W. [Architectural Association].
COCKRILL: Owen Hanworth [*Probationer* 1899]; 12, Euston Road, Great Yarmouth [*Master*: Mr. J. Wm. Cockrill *].
COOKE: Isaac, jun. [*Probationer* 1895]; Kirkstone, Grosvenor Street, Liscard, Cheshire [*Master*: Mr. Henry Hartley *].
COOKE: William Henry Howard [*Probationer* 1901]; Badbrook House, Stroud, Glos. [*Master*: Mr. V. A. Lawson].
EDLESTON: Ernest Harcourt [*Probationer* 1899]; Dysart Buildings, Nantwich, Cheshire [*Master*: Mr. R. Bassnett Preston *].
ETHERINGTON-SMITH, B.A., Oxon: Harry Launcelot [*Probationer* 1901]; East Ella, Putney, S.W. [*Masters*: Messrs. Read * & MacDonald *].
HUMPHRY: Francis John [*Probationer* 1899]; Wansfell, Chesswood Road, Worthing [*Master*: Mr. Gilbert M. Simpson *].
HUNNISETT: Hubert [*Probationer* 1900]; 3, High Street, Rye, Sussex [*Master*: Mr. F. H. Humphreys *].
LOVELL: Percy Wells [*Probationer* 1900]; Lynwood, Highgate, N. [*Master*: Mr. Aston Webb, A.R.A.*].
MILLAR: Allan Scott [*Probationer* 1898]; 5, Victoria Square, Reading [*Masters*: Messrs. Millar & Cox].
MONSON: Christopher John [*Probationer* 1900]; Croft Lodge, The Park, Newark [*Master*: Mr. Harold Bailey *].
POTTER: Alan [*Probationer* 1899]; 43, Manchester Street, Manchester Square, W. [*Master*: Mr. Alfred H. Hart *].
PRYOR: Ernest Langman [*Probationer* 1901]; 28, South Street, Greenwich, S.E. [*Master*: Mr. A. Roberts].
SMITH: Harold Bayldon [*Probationer* 1896]; 17, Woburn Place, Russell Square, W. [*Master*: Mr. A. G. Bond *].
STUBBS: Rowland [*Probationer* 1897]; Fern Villa, Winsford, Cheshire.
SYKES: John Reynolds [*Probationer* 1899]; 40, Camden Square, N.W. [King's College].
TAYLOR: Edgar Raymond [*Probationer* 1898]; 17, Blomfield Street, Upper Westbourne Terrace, W. [*Master*: Mr. W. Henry White *].
THOMAS: Basil Walter [*Probationer* 1900]; St. Bede's Hill Lane, Southampton [*Master*: Mr. A. E. J. Guy].
TUCKER: Richard Froude [*Probationer* 1901]; Combe Lodge, Upper Teddington, S.W. [*Master*: Mr. T. G. Jackson, R.A.]
WHIDDINGTON: Henry Morgan [*Probationer* 1895]; 71, Queen Street, Cheapside, E.C.

The asterisk (*) denotes members of the Institute.

### The Final and Special.

The Final and Special Examinations, qualifying for candidature as *Associate R.I.B.A.*, were held in London from the 14th to the 21st November. Of the 49 candidates examined, 20 passed, and the remaining 29 were relegated to their studies. The following are the names of the passed candidates:—

BENNETT: Robert [*Probationer* 1898, *Student*, 1900]; Greenmoor, Buxton.
BROOKS: William Edward [*Probationer* 1900, *Student* 1901]; 7, Norris Street, Haymarket, W.
CHESTER: Frederick Billinghurst [*Probationer* 1892, *Student* 1898]; 208, Denmark Hill, S.E.
CROWLEY: Walter St. Leger [*Probationer* 1896, *Student* 1899]; Innisfallen, Teilo Street, Cardiff.
GREENWOOD: William [*Probationer* 1900, *Student* 1901]; 13, Fielden Street, Blackburn.
HIGSON: John Hindle [*Probationer* 1895, *Student* 1898]; Heber Villa, Preston New Road, Blackburn.
HOLT: Joseph [*Probationer* 1893, *Student* 1898]; The Limes, Hawthorn Lane, Wilmslow, Cheshire.
HOSKINS: Henry Joseph Bissaker [*Probationer* 1898, *Student* 1900]; 23, Longmore Street, Birmingham.
JONES: John Ivor Price [*Probationer* 1895, *Student* 1898]; Ashdene, Cathedral Road, Cardiff.
LETHBRIDGE: James Morton [*Probationer* 1898, *Student* 1900]; 9, Cholmeley Villas, Highgate, N.
MACLENNAN: Thomas Forbes [*Special Examination*]; 62, Colinton Road, Edinburgh.
MONRO: Charles Ernest [*Probationer* 1891, *Student* 1899]; Saxonholme, Bearsden, near Glasgow.
NICOL: George Salway [*Probationer* 1895, *Student* 1897]; Elmdon Lodge, Acocks Green, Birmingham.
PARKINSON: Charles Edmund Lancaster [*Probationer* 1899, *Student* 1900]; 101, Ladbroke Grove, W.
REES: Henry Treharne [*Special Examination*]; 11 Victoria House, South Lambeth Road, S.W.
SALMON: Nathan Thomas [*Probationer* 1895, *Student* 1897]; Castle Street, Reading.
TOWSE: Stanley [*Probationer* 1893, *Student* 1899]; Hillside, Ravensbourne Park, Catford, S.E.
WATKINS: William Henry [*Probationer* 1899, *Student* 1901]; Summerhill Road, St. George, Bristol.
WHITE: Horace [*Probationer* 1896, *Student* 1898]; Loughton, Essex.
WRIGLEY: Francis Carr [*Probationer* 1897, *Student* 1898]; 8, Barrowgate Road, Chiswick, W.

The following shows the number of failures in each subject of the Final:—

| | |
|---|---|
| I. Design | 23 |
| II. Mouldings and Ornament | 23 |
| III. Building Materials | 14 |
| IV. Principles of Hygiene | 12 |
| V. Specifications | 8 |
| VI. Construction, Foundations, &c. | 13 |
| VII. Construction, Iron and Steel, &c. | 16 |

*The Ashpitel Prize.*—The Board of Examiners recommend that this Prize be awarded to Mr. William Greenwood, of Blackburn [*Probationer* 1900, *Student* 1901], he being the candidate who has distinguished himself most highly in the Final Examinations of the year.

### Recent Additions to the Library.

In compliance with the request of the Hon. Secretary made at the close of last Session, there were laid upon the table at the Business Meeting on Monday some of the more important works which have been added to the Library since the June list was published.

Mr. ALEXANDER GRAHAM, F.S.A., in calling attention to them, said that the books were placed upon the table to afford members an opportunity of seeing how active the Literature Committee was on their behalf, as well as to show that their Library was gradually approaching a state of greater completeness. Gaps were being filled up—works on subjects not strictly

architectural but useful to architects were constantly being added; and, speaking broadly, every contemporary work, whether published in this country or abroad and stamped by the approval of the Literature Committee, was acquired and placed immediately at the service of members in the Library. Amongst the books he wished particularly to call attention to was one on a subject interesting to them at the present moment because it related to concrete construction. The work was by M. Christophe, and called *Le Béton Armé*—i.e. iron or steel used in connection with concrete. The subject had come up prominently before them with regard to Vauxhall Bridge, which the Institute were anxious should be constructed of concrete faced with granite. What the result would be he was unable to say; but anyone who was interested in concrete construction would do well to look at this little book and see how admirably the subject was worked out. Formulæ were there given for every kind of what the author called "*ciment armé*," and its application to various kinds of construction. Coming to another subject totally different, he called attention to a book which they had long been in want of—viz. Förster's *Monuments d'Architecture, de Sculpture et de Peinture de l'Allemagne depuis l'établissement du Christianisme jusqu'aux temps modernes*, translated from the German into French. The work was in eight volumes, and he strongly recommended anyone interested in the history of German architecture from mediæval times down to 1860 to examine the book. It was printed before the days of photography, and the plates were all engraved; but he could not help thinking that anyone fully acquainted with the subject would find that the work had formed the basis of others that were more prominent and better known. Then there was another work entitled *Archives de la Commission des Monuments historiques*, in three volumes, which showed them how thoroughly their French friends carried out work of that kind when they put their hands to it, and he only wished that works of a similar kind could be brought out in this country under Government auspices. Then there were works quite new to them on the Renaissance in Sweden and Poland, which showed how the Swedes and the Poles had worked out the Renaissance according to their own ideas, totally different from ours, but adapted to their own climates and their own habits of life. Members would also find a very curious book which he was very glad the Literature Committee had purchased. It consisted of about sixty or seventy drawings by Hans Holbein printed on Japanese paper: the drawings were interesting to architects because the fillings-in were all of an architectural character, showing that Holbein was a master of a certain kind of drawing, and that he understood architectural decoration. Then there was a book which he might almost call unique—viz. Thiollier's *L'Architecture Religieuse à l'époque romane dans l'ancien diocèse du Puy*. So many of them knew that district that he recommended them to look into the book—for one reason, that everything in it was produced in Puy, and altogether it was very creditable to the people of that district. Then there was a book which perhaps would interest some of them more than any of the others—the work of one of the Pensionnaires of the École des Beaux-Arts. The subject he had taken up was the Baths of Diocletian, and it would be seen how thoroughly he had worked the matter out from the little there was to be seen there, and how he had restored the building. It was a kind of drawing that we did not encourage in this country for many reasons. In France the young architect, when he had finished his articles, gave up a certain amount of time to the study of some particular class of building, and anyone who was ambitious of a high reputation took up such a building as M. Paulin had done, and worked it out thoroughly. This matter of drawing touched upon the vexed question of how architecture should be represented in the Architectural Room at the Royal Academy. He would not enter into such a controversial subject, because they all held different opinions upon it. But if the question how architects' drawings should be exhibited at the Royal Academy were to be discussed at the Institute on some evening when they were not fully occupied, it would do a great deal of good, not only for architects, but for the public also. There was no reason why the Architectural Room should not be as attractive to the public as any other room at the Royal Academy. He trusted that next Session they would be able to give up a portion of an evening to the consideration of this subject. A most beautiful book on the table was the second edition of Mr. Penrose's *Athenian Architecture*. They already had a copy in the Library, but by good fortune they had come across this second one. It was a magnificent copy, bound in levantine morocco, and they intended to place it in the Reference Library and use the other in the Loan Library. He might mention a rather curious book-plate at the end with the motto, "Nyl ne sait qui n'essaye," and he should like someone to ascertain, if possible, where the book came from. It had evidently belonged to a lover of the book itself—a lover, he was going to say, of their dear friend Mr. Penrose. He should like to add a word with reference to the Loan Library. The Loan Library was increasing very largely—in fact, it was becoming a library of itself—and he thought the day was not far off when they should have to do something to make this valuable collection more accessible to their friends in the provinces. In the large provincial towns there were, of course,

architectural libraries; but in many of the small towns and villages where their young architects came from, there was no opportunity whatever of getting new books. Some years ago, when he had the honour of being Chairman of the Literature Committee, he mooted the subject and endeavoured to arouse a little enthusiasm upon it; but he met with very little help. Difficulties were pointed out as to the way in which the books should be sent, in whose custody they should be placed, and who should bear the expense of carriage to and fro. He could not help thinking that if one of their provincial friends who knew something of the wants of young provincial architects would kindly give up a little time, not merely in inspecting their catalogue, but in coming to the Library itself and spending an hour or two with the Librarian, and looking at the actual books available, he might come to some conclusions on the subject, and be able to co-operate with the Institute in devising some system by which the books could be circulated so as to be more beneficial to their country brethren. He hoped that if mention of this were made in the JOURNAL someone would come forward and help to bring about this desirable result.

Mr. W. D. CARÖE, M.A., F.S.A. [*F.*], asked to be allowed to make a few remarks upon Mr. Graham's admirable address. Mr. Graham had referred to the French practice of reproducing in the form of monographs beautifully illustrated reproductions of historical buildings, with special reference to the three very fine volumes before them on the table. Mr. Graham referred to the transference to paper and to the restoration of the Baths of Diocletian by one of the French gentlemen of the Prix de Rome. They were all exceedingly jealous of the extraordinarily magnificent way in which the French illustrated their buildings, and they heartily concurred with what Mr. Graham said, and wished something of the same kind was done in this country. But there was another side to the question. The system in France of appointing year by year an eminent student who passed his time in Rome in learning how to restore on paper one of those ancient buildings had its evils. The French Government, when these distinguished students returned to their own country, seemed to consider it necessary that they should have some historical building put under their care. The result had been disastrous to the historical buildings of France. A man without any suitable training probably—if it were a Gothic building without the slightest care for the building itself, or any knowledge of its details or its peculiar methods—was turned on to make it into a new building. He produced with great care and pains a magnificent volume upon the building itself, and virtually transferred it to paper. The building, the actual stones, were wiped out and replaced by something that never was there before. He merely wished to call attention to that point because it was referred to in Mr. Graham's admirable address, and because, although he should be glad to see many fine books upon their historic buildings produced, and wished they could be produced by the Government, he hoped that the system, so unfortunate for the buildings themselves, which prevailed in France would never rule in this country.

### The Practice Committee's Book on Dilapidations.

At the conclusion of the ordinary business before the Meeting last Monday, Mr. S. Flint Clarkson [*F.*], on behalf of the Practice Standing Committee, gave some account of the book on Dilapidations, the preparation of which has engaged the Committee during the past two sessions, and which is now completed and passing through the press. At the outset of his remarks Mr. Clarkson quoted from the Committee's Report to the Council on the completion of their task last June. The following is the text of the Report referred to:—

"The Practice Standing Committee of the Institute having, with the approval of the Council, undertaken the consideration of the subject of Dilapidations, decided to use as a basis the original pamphlet issued by the Institute in 1844 and reprinted in 1869 when the first edition was exhausted, and has, as the result of the labour of two years, completed a thoroughly modern book, divided into chapters under definite headings with new lists of references, and many other changes in form and substance.

"The Committee has also obtained copies of 'Reports on the Condition of the Premises' and similar documents from France and other countries, and submits a model for use by British architects (see Chap. III.). The necessity for this is clearly set out on pp. 11 and 12 of the original pamphlet in the following words:—'As a preliminary to the execution of leases in general the premises to be leased should be surveyed both on the part of the lessor and the lessee, and a schedule should be drawn up and signed by them or their agents specifying the actual state of every part of the buildings, by reference to which the dilapidations should be assessed at the end of the term. Such a document universally accompanies agreements for the occupation of houses in France, under the name of "Etat des Lieux," and its adoption is strongly recommended by the Council for the consideration of the profession at large as a means of simplifying a question usually attended with much complexity and seldom satisfactorily determined.'

"The Committee, in addition to presenting examples of repairing and surrendering covenants usually employed, has given improved forms for such covenants in new leases (see Chap. II.). The Committee wishes to express its cordial thanks to

those who have given valuable assistance, including the Institute solicitors. It is hoped that these covenants will soon come into general use.

"The Committee has also dealt more in detail with the subject of landlords' and other fixtures (see Chaps. VIII. and IX.). A Schedule of Fixtures is important and too often omitted from leases. With such a schedule and a 'Report on the Condition of the Premises' it should always be possible at the end of the lease to judge fairly of the state of the premises and fixtures at the commencement of the term, and to make a fair assessment of the dilapidations.

"The Committee has further added a chapter on Notices to Repair, and suggested forms to be served upon the lessee in accordance with the provisions of the Conveyancing Acts of 1881 and 1890 (see Chap. X.). Notes are given as to the usual charges of architects engaged in this class of work (see Chap. XI.). A short reference to the Acts of Parliament which affect the assessment of Dilapidations has also been added, and a list of leading cases decided in the High Court giving the principle involved (see Chap. XII.).

"The chapter on Ecclesiastical Dilapidations is a special Report on this subject prepared for the Practice Standing Committee by the Ecclesiastical Surveyors' Association, to whom the Committee wishes to express its thanks.

"It will, in the opinion of the Committee, be necessary from time to time to revise this book.

"The Committee hopes that members of the Institute will follow the procedure indicated, and use the forms set out, and will, as far as they can, influence others so as to secure the general adoption of satisfactory repairing and surrendering covenants, and a practice as to the assessment of dilapidations which shall be fair and just to both landlord and tenant."

Mr. Flint Clarkson, in the course of his statement reported below, asked for the publication of the following *précis* of the contents of the volume, which was drawn up by the Committee so as to show at a glance the scope of their work:—

Chapter I. Preface.—Committee appointed in 1842 by R.I.B.A.—Publication in 1844 of Committee's Report—Order of present Publication—Best Current Practice—Revision from time to time desirable.

Chapter II. Repairing and Surrendering Covenants.—Covenants in Leases—Dilapidations—Typical Forms of Repairing and Surrendering Covenants—R.I.B.A. Council on Covenants in 1844—Mitigating Effect of Legal Decisions—Proposed Forms of Repairing and Surrendering Covenants.

Chapter III. Report on the Condition of the Premises.—Reports as Schedules to Leases—What Report should state—Notes as to existing custom abroad with reference to Records of the Condition of the Premises ("État des Lieux"): France; Belgium—"Procès Verbal de l'État des Lieux": Vienna; Cologne; Berlin; Canada.

Chapter IV. Liability of Lessee under a Lease for Years.—Definition of Dilapidations—Burden of Repairs on Tenant—Possible Liabilities of Lessee: Bricklayer; Mason; Tiler; Slater; Carpenter; Joiner; Ironmonger; Smith; Plumber; Coppersmith and Zinc Worker; Plasterer; Paperhanger; Painter; Glazier—Altered and Missing Parts of Buildings—Special Covenants—Practice in Scotland, Ireland, the Colonies, etc.

Chapter V. Yearly and other Tenancies.—Liability of Yearly Tenant; Tenant for Life.

Chapter VI. Farm Buildings and Farms.—Special Customs—Custom as to finding materials—Payment by outgoing Tenant for Dilapidations—Customs as to Cultivation, etc.

Chapter VII. Ecclesiastical Dilapidations.—Principle of Law: *Wise* v. *Metcalfe*, *Martin* v. *Roe*—Liabilities of Rectors—Ecclesiastical Dilapidations Act 1871—Official Surveyors—Exemption for five years—Appeals—Other Provisions.

Chapter VIII. Structures Appurtenant to Premises. Fixtures.—Appurtenant Structures—Fixtures—General Rules—Three Lists of Fixtures—Remarks on Chapter IX.—Mortgagor and Mortgagee.

Chapter IX. Fixtures (*continued*).—Schedules of Appurtenant Structures and Fixtures: 1. List of Fixtures held not removable; 2. List of Trade Fixtures held removable; 3. List of Fixtures held removable (not being Trade Fixtures) if put up by Lessee.

Chapter X. Notices to Repair. Money Payments.—Form of Notice to Repair—Form of Notice upheld by Court of Appeal—Costs of Solicitor and Surveyor—Money Payments.

Chapter XI. Professional Charges.—Charges by percentage; by Time; under Ecclesiastical Dilapidations Act 1871.

Chapter XII. Acts of Parliament. Leading Cases. Books of Reference.

Mr. Flint Clarkson stated that the pamphlet already in existence had, to a great extent from the passage of time, got out of date, and it seemed desirable that this pamphlet should be edited first of all, then expanded and put into a modern form, with a large quantity of new information. The Practice Committee worked steadily at the matter, meeting periodically and sometimes more frequently than ordinarily, and had got through a very large amount of work during the last two years. In bringing the work up to date an important matter to be insisted upon was the Report on the condition of the premises. It had often been a weakness with leases that the condition of the premises when leased was left to the evidence of people who knew them at the time. The Committee had come to the same conclusion that the Council arrived at in 1844—namely, that the condition of the premises should not be left to evidence, but that it should be put in a written record. The Committee had obtained from correspondents abroad a quantity of information with reference to the custom prevailing in France, Belgium, Vienna, Cologne, Berlin, and Canada as regards the Report on the condition of the premises at the time of the lease being entered into. The Committee also turned their attention to the fossil forms of repairing and surrendering covenants in general use. These traditional forms were used without special adaptation to the nature of the property or the circumstances under which it was leased. It seemed desirable to make a

change, and to introduce forms of covenants that could be adapted to modern requirements, and be capable of modification under special circumstances. Accordingly typical forms of repairing and surrendering covenants had been set out in the book, and these were followed by new forms—forms recommended by the Committee, which if adopted would lead to a better practice amongst solicitors and those responsible for drawing up leases in the future. These covenants, and indeed the whole of the book, had been subjected to a great deal of criticism, the work having been submitted to the Surveyors' Institution, and also to the Institute solicitor. The Surveyors' Institution, without committing themselves to a formal approval of everything, had assisted the Committee a great deal, and the solicitor to the Institute had gone into the matter very elaborately. The Committee had endeavoured as far as possible to meet all the suggestions that had been made. Another matter they had devoted attention to was the subject of landlords' and tenants' fixtures; the provision of a schedule of fixtures to all leases was insisted on, and a large amount of work had been done in order to tabulate in a convenient form for reference all the cases reported in the law books. Mr. Sidney Perks had been more than indefatigable: he had devoted an immense amount of time to this part of the book, and had produced a monumental list—indeed, three monumental lists. Then, in order to make the subject complete from their point of view as members of the Institute, the charges of architects had been inserted, also lists of books of reference and Acts of Parliament dealing with the subject generally. The leading cases bearing upon the subject had also been briefly summarised in the book, so that they might be easily referred to where some special point was in question, and a system of elaborate reference had been devised to enable anybody to get the identical leading case in any particular department of the subject. As regards ecclesiastical dilapidations, the Ecclesiastical Surveyors' Association had been taken into their confidence and had entered with considerable enthusiasm into the work. They had supplied a most admirable chapter (Chapter VII.) on ecclesiastical dilapidations, the whole subject having been dealt with from the point of view that experienced ecclesiastical surveyors should take, not simply dealing with the general principle, but dealing also with the practice and the history of this special branch of the subject. Before concluding, he wished to say a word upon the original intention of the Committee. They were of opinion that it should not be possible for the world at large to consider that any subject connected with buildings should be outside the consideration of the Institute; that the Institute should keep itself well in touch, not only with questions involving art and creative work, but also with subjects that dealt with the maintenance of buildings. It was not a matter outside the work of an architect to see that property interests in the maintenance of buildings were kept up to the standard laid down by legal documents. The new book was therefore something like a manifesto, so to speak. It was an assertion of the Institute's view with respect to this matter. It was something more than merely a re-editing of a pamphlet; it was a reaffirmation of the status and position which the compilers of the original pamphlet had taken up, and which the Council of those days had endorsed—namely, that architects were the people above all others who should deal with such a subject as dilapidations.

Mr. J. Douglass Mathews [*F.*] said that when the old pamphlet was published in 1844 matters connected with dilapidations were confined almost entirely to what were then called architects and surveyors. Since that time the work had to a great extent gone out of their hands, and been handed over to house agents who were also surveyors. There were some solicitors and surveyors who felt that their business was to get their full pound of flesh out of the unfortunate lessee. The clauses of the lease were most critically examined, and in many cases they were rendered far more oppressive than was the intention of the draughtsman when the leases were prepared. Questions were arising day after day as to the construction of the repairing covenants in leases and their effect upon dilapidations. The result was seen in the disinclination that existed at the present time to take leases. Formerly it was a very ordinary thing to take a dwelling house on lease; now it was most unusual, except with very large houses. Consequently domestic buildings were by no means good securities, because a house taken for three years, or five years and vacated, caused the owner a large sum to put it in repair, and possibly he would have the house on his hands for six or twelve months. It seemed desirable to the Practice Committee that the practice of dealing with dilapidations should be put in such a form that both lessees and lessors should understand their proper positions, and therefore the Committee urged the desirability of there being added to the lease a schedule showing the state of the house when the lessee took it. By the attachment of such a description in the lease direct information would be obtained as to the state and condition of the premises when the tenant took them, and it would then be easier to assess the dilapidations caused by the tenant during his tenancy. That was one of the most important features of the book. Those of them who had adopted a plan of that kind had found it to be greatly to their advantage in settlement of dilapidations between landlord and tenant.

Some held that when a lease had expired the premises must be put into a perfect state of repair for another tenant. Unless such a covenant was specially entered into that was not the case, as there were very few buildings put into a thorough state of repair for the amount of money that was usually obtained as compensation for dilapidations. The book was intended to act as a help and guide to architects and surveyors, and the Committee felt that, this being the case, if it had the *imprimatur* of the Institute it would do something to lead to an alteration in existing leases, which they considered would be very beneficial. He thought it only right to add that Mr. Clarkson had given but a very faint idea of the amount of time that had been devoted to the preparation of the book. By far the greater part of the work had been done by the gentlemen who formed the sub-committee—viz. Mr. Clarkson, Mr. Perks, and Mr. Brodie (*Hon. Sec.*). They had given an immense amount of time to its compilation; their reports from time to time had been criticised by the members of the Committee, and their work had been gone through by the solicitor to the Institute, so it was hoped that the book now completed would be a valuable one. The Practice Committee had passed a vote of thanks to the members of the sub-committee, and they deserved the hearty thanks of every member of the Institute. He hoped their labours would not be forgotten.

Mr. C. H. Brodie [*A.*], *Hon. Secretary of the Practice Committee*, said he should like to emphasise a remark made by Mr. Clarkson, viz. that this book, which had caused the Practice Committee a considerable amount of labour, was produced within two years. That, he thought, should be scored to the credit of the committee. The charge was often brought against their committees that they took so long to get through a task. When the book was issued, if members would bear in mind that the Practice Committee produced it inside of two working sessions of the Institute, he thought they would be as pleased as were the members of the Committee themselves.

Mr. W. D. Caröe, M.A., F.S.A. [*F.*], said he should like to ask Mr. Clarkson a question with regard to the chapter on Ecclesiastical Dilapidations with which he personally was specially concerned. Would he kindly inform them who was the President of the Ecclesiastical Surveyors' Association at the time the work was produced and who had a special hand in its production?

Mr. Clarkson: Mr. Lacy Ridge.

Mr. W. D. Caröe: I am quite satisfied, sir.

Mr. E. W. Hudson [*A.*] said that as an Associate he should like to say how much he appreciated the work that had been described to them by Mr. Clarkson and Mr. Douglass Mathews. Of course the proof of the pudding would be in the eating. Members had not seen the work yet; but if it bore out what was promised the Institute would be greatly indebted to the Committee. The work seemed to be a practical answer to those who twitted them with being both architects and surveyors; it showed them that they did not confine themselves entirely to the work of artists, but still kept their hold upon the artist's work produced in brick and stone. That should be driven home to all owners of property. There was great need of a schedule showing the condition of the building at the time the lease was taken. Those who had experience of dilapidations knew how difficult it was to get evidence of the state of the building when the lease was entered into. If it became the general practice to attach such a schedule to leases it would be a matter of great satisfaction to the public. Members were greatly indebted to the Practice Committee. In producing this book the sub-committee seemed to have done Titanic work, which redounded considerably to the credit of the Institute.

The Chairman (Mr. John Slater, *Vice-President*) said he was sure they had all listened with great interest to what had been told them by Mr. Clarkson and Mr. Douglass Mathews. He (the Chairman) had a great deal more to do with the landlords' side of the question than with the tenants' and lessees', but he always had great sympathy with the lessees in their obligations. There could be no doubt that in many cases the lessees were very hardly dealt with if the clauses which governed dilapidations in the old form of leases were strictly complied with. He was bound to say that on the estate of which he had the management they were exceedingly liberal to lessees. It often happened when buildings had to be pulled down that they were found to have been so badly used that they were obliged to assess the outgoing lessee in dilapidations. But when a house was going to be pulled down, their practice, after deducting solicitors' and surveyors' charges, was to hand over the balance received from dilapidations to the new tenant towards his rebuilding. That seemed to be an exceedingly liberal way of dealing with the matter, and one that might be more generally adopted. With regard to the conditions which obtained in old leases, he himself had had experience of their absurd nature. He took the lease of a house some years ago and found that one of the conditions was that he should allow the free passage of sewage and water through his grounds. He pointed out that although at the time the lease was originally granted this might have been correct, the main sewer had been made, and every separate building drained into the sewer. He was told that this was a sub-lease, as it were, and the old conditions must be strictly subscribed to! As Mr. Clarkson quite justly said, the new conditions in taking leases ought to be taken into

account in any new lease. They were all agreed as to the necessity of the Institute taking cognisance of all matters connected with architecture and building, not only on the art side, but also on this question of dilapidations, in which architects were undoubtedly the persons who had the most interest; and they ought to see that they had cognisance of the conditions which had to be laid down. The Council had decided that this work was to be issued as an Institute book. The Practice Committee, with the modesty which distinguished them, wished that their names should not appear. The Council, however, felt that this was not fair to the Practice Committee, and they proposed to state on the title-page that it was a "Handbook prepared by the Practice Standing Committee of the Royal Institute of British Architects, and issued by the authority of the Council." He should like before sitting down to move from the Chair the very hearty vote of thanks of the Institute to the Practice Committee, and particularly to the Sub-Committee—Mr. Flint Clarkson, Mr. Perks, and Mr. Brodie (Hon. Sec.)—for their labours in preparing this book. He had taken the opportunity to look through the book, and he was quite sure that when they came to read it they would find that the matter had been put on a new footing, and that they would receive the greatest possible help from the book in dealing with this vexed question of dilapidations.

Mr. T. E. Collcutt [*Vice-President*] seconded the vote of thanks, which was carried by acclamation, and briefly responded to on behalf of the Committee by their Chairman, Mr. Douglass Mathews.

### Sir William Emerson.

Past and present members of Council signalised the distinction conferred by the King upon Sir Wm. Emerson as President of the R.I.B.A. by giving a dinner in his honour at the Café Royal, Regent Street, on the 2nd inst. The function was attended by some forty guests.

### The Architectural Association.

At the Meeting of the Architectural Association held in the rooms of the Institute last week formal ratification was given to the A.A. Committee's resolution accepting the conditions under which the premises of the Royal Architectural Museum in Tufton Street, Westminster, are to be transferred to the Architectural Association. Details of the scheme are given in Mr. R. S. Balfour's communication printed in the last number of the Journal [pp. 38–40].

The President, Mr. H. T. Hare [*F.*], stated that the proposal and the conditions had been very carefully considered by the Committee of the Association in all its bearings, with the result that they were unanimously prepared to accept the gift with gratitude. The Committee took into consideration the following points:—(1) The position of the Royal Architectural Museum and its accessibility; (2) The adequacy of the premises to requirements; (3) The leases; (4) The alterations required and their expense; (5) The terms of the transfer. With regard to the first, the Committee concluded that any disadvantage there might be in position was more than counterbalanced by the fact that the building was universally known throughout the profession and also one which had an extremely interesting past history. There were also the facts that the Museum was in close proximity to the Church House, Westminster Abbey, the Houses of Parliament and other notable buildings, and that the entire district was rapidly improving in all respects. Westminster, too, was fast becoming the home of all kindred societies. As to the second point, that of the adequacy or adaptability to the requirements of the Association, there could be no question that there was ample room for all the classes. The only point on which they were in some doubt was as to whether they could arrange to hold the meetings there or whether it would still be necessary to have them at 9, Conduit Street or elsewhere. They were hopeful, however, that a meeting-room might be arranged on the premises. The Westminster School of Art had for some years been carried on in the studios, so that they were well adapted for the purposes for which the Association require them. In addition to the central hall where the casts were, and office accommodation, there were eight large studios, each of which was as large as the three the Association had in Great Marlborough Street. The third point as to the leases, or, rather, the lease, which would expire in 1926. That gave about twenty-four years, and the Committee considered that this period was long enough to warrant them in taking the risk of being able to secure a renewal at the end of the term. The fact that the other lease was for a much longer period should prove of some assistance, but in any case it was proposed to approach the Ecclesiastical Commissioners at an early date in order to ascertain what arrangements could be made for extension. The fourth point was as to the alterations and their probable cost. This question the Committee had been unable at present to go into exhaustively, but a Sub-Committee had been appointed to consider the matter and prepare a report with suggestions. It was evident, however, that the sum which had been collected and promised towards the Premises Fund would not be more than sufficient to carry out all that they would want. The subscriptions having been given on the assumption that a new building was to be erected, it would be necessary to obtain the sanction of the donors for the fund to be applied to the

alterations, but there was no reason to anticipate any difficulty on that score. As to the terms of the transfer, there did not appear to be anything to which exception could be taken on any ground. The opening of the Museum to the public could, it seemed to him, only result in benefit to the Association, as it would tend to make it more widely known and appreciated. The Association undertook no responsibility which the present Council of the Museum had not borne since its institution, and the possession of the collection of casts would be of the greatest value in the educational work of the Association. It seemed to him, personally, as it did to the Committee without exception, that the gift of these premises was the most fortunate circumstance which had occurred to the Association during the course of its long history, and he trusted it would prove to be the starting-point for a widely extended sphere of increased usefulness.

### Professor Flinders Petrie's Work in Egypt.

At the annual meeting of the Egypt Exploration Fund, Professor Flinders Petrie briefly reviewed the results of recent exploration, and gave a forecast of next year's work. His remarks were as follows:—

I need hardly trouble you with any details of the work of last year, as the volume *Abydos I.* has been in your hands since July. The Fund has always issued its results more quickly than those of any other work, and for the last three years the publications have been given to you as soon as the collections reach England. The work of building up the early history of the dynasties has continuously gone forward, and few perhaps realise that what is now quoted as a matter of course in the order of the kings was entirely brought to light only two years ago in royal tombs. When that was published the envious remarked that we should doubtless have to change our minds because the results were so quickly laid down. But scarcely a single conclusion has been modified in the two succeeding years which have built up so much more. And the only argumentative objections that have been raised entirely fall to the ground when accurately studied.

The main result of last winter's work was the reading page by page the successive levels of the early town of Abydos; identifying the earlier levels of it with the last four stages of the prehistoric sequence dates, and the later levels with the reigns of the earliest kings. Thus an exact continuity has been determined between the end of the prehistoric age of unwritten record and the beginning of the 7,000 years of written record of Egyptian history. This is entirely the result of archæology; not a word or a sign of writing helped this discovery; and a scholar who only understood the written record would have seen nothing in the site but a meaningless cartload of flints and broken potsherds, as meaningless to him as a papyrus roll is to an Arab digger. Our knowledge of the past has gone through four stages—the gold-hunting, the art-hunting, the inscription-hunting, and now the archæology-hunting. Each stage has been despised as foolishness by those who preceded it, and each in its turn has shown that there is a wider interest and a greater importance in the remains of past civilisations. In the coming year we look forward to a very definite course of work. There is the great site of the oldest temple of Abydos, on which we have only yet cleared down to the eighteenth dynasty level. The two or three yards of accumulations which lie below that must consist of the older remains of the temples which were rebuilt by the earlier kings. Re-used blocks of the sixth, eleventh and twelfth dynasties show that a series of temples have left their mark, and the temple of the first dynasty kings is the goal which we seek below all these. The site is under water-level till late in the spring, and it will be needful to do the costly work of removing all the upper layers in order to dry the soil below and to be able to work, perhaps under the water, to finish it. But the most important early site in Egypt is worth some trouble and cost, to save all we can of history which will never be known except from this ground. Another great work is that of clearing out the two immense tombs of the twelfth dynasty kings, which were found last year. One of these I have gone through, and seen two vast sarcophagi of red granite and hundreds of square yards of polished quartzite lining the passages, which show the lavish care of the work. We may hope to bring some fine objects to light from the deep mass of chips and rubbish which half fills the passages and chambers, some 600 feet long. There is also the excavation of the large fort of the Old Kingdom, within which burials of later ages have been found, but as it has never been really cleared out there is much to be done in it. And besides this, the great cemetery of Abydos has been by no means exhausted yet. Now all this work is a very large amount to cover, far beyond the scope of one person. The ideal of the Fund has hitherto been that of individual explorers, sometimes with assistance, examining a single building. This has perforce had extensions, but the unit of work has been the type. I hope that this year will see a different ideal established, that of a group of workers, each devoted to a separate ground, and all co-ordinated in methods and results by one organiser. The committee have agreed to the principle of extending the work by joining more workers together, and we go out this year a much larger party of united workers than we have ever had before. To my great regret we have lost the help of the most capable student we have had, Mr. Arthur Weigall, who has been offered a position in Egypt in which he will find future scope. We start, therefore, with entirely new helpers. Mr. Hugh Stannus has offered for this year his skill in architecture and drawing, which will help to clear the history of the Osiris temple. Mr. Currelly, Mr. Rawnsley and Mr. Ayrton are all new to the subject, and with different capacities and in various ways will, I hope, take charge of parts of the works. Miss Hansard has volunteered to stay and give us some help with artistic drawing, and Miss Eckenstein will attend to the camp work on the collections. My own business will be organising, arranging and interpreting the work, drawing and preparing for publication. On collateral work, apart from the Fund, Miss Murray and my wife will be copying a great inscribed tomb. Thus we shall be a party of nine, and hope to get through in one season what on the old rate would have taken three years. There can be no question that this is far the more economical way of working; and it is obvious that the more we can show done the better encouragement there is to subscribers at home and abroad. We start, therefore, on what will, I hope, be a new type of working for the future, and shall have a staff which will render the Fund less dependent than before on the health of any one worker. It is the duty of this Society to rescue what we can in Egypt before it is entirely wrecked by the dealer, the ignorant amateur and speculator and the commercial destroyer, none of whom leave a shred of information; and a duty which has its scope in the present generation particularly, as at the rate of wreckage there will be but little left behind for future lives to explore. Now is the time.

### The late "Leader Scott" (Mrs. Baxter).

The death, which recently occurred in Florence, of the lady so well known in this country as Leader Scott should not be allowed to pass without notice in the JOURNAL. The daughter of the well-known Dorsetshire poet, the Rev. William Barnes, she had lived continuously in Italy since her marriage with Mr. S. T. Baxter some forty years ago. "She was," says a writer in the current number of the *Athenæum*, "a *persona grata* in literary and artistic Italian circles, and the Accademia delle Belle Arti some years ago elected her an honorary member of their society in recognition of her work in interpreting certain aspects of Italian art." Her most important work is her book *The Cathedral Builders: the Story of a Great Masonic Guild*, published in 1899. In this she traces the all-pervading influence of the Guild of Comacine Masons, not only upon the architecture of Italy, but also upon that of France, Germany, England, and Ireland. An interesting review of this book, from the pen of Mr. Paul Waterhouse, appeared in Vol. VI. of the JOURNAL. More recently she wrote a life of Filippo Brunelleschi for Messrs. Geo. Bell & Sons' "Great Masters in Painting and Sculpture" Series. A review of this, by Professor Beresford Pite, appears at page 16 of the current volume of the JOURNAL.

BENJAMIN WALKER [*A.*]

## MINUTES. III.

At the Third General Meeting (Business) of the Session 1902-3, held Monday 1st December, 1902, at 8 P.M., Mr. John Slater, *Vice-President*, in the Chair, with 18 Fellows (including 6 members of the Council) and 14 Associates, the Minutes of the Meeting held 17th November [p. 43] were taken as read and signed as correct.

The Secretary announced the results of the November Examinations—Preliminary, Intermediate, Final, and Special.

The following candidates for membership in the various classes were elected by show of hands under By-law 9, viz.:—

AS FELLOWS (6).

WILLIAM BLACK (Cape Town, South Africa).
WILFRED JOHN HARDCASTLE.
LEONARD VINCENT HUNT [*A.* 1888].
LEONARD MARTIN.
JAMES RANSOME [*A.* 1893] (Calcutta, India).
SAMUEL BRIDGMAN RUSSELL [*A.* 1890].

AS ASSOCIATES (43).

GEORGE WILFRED ALLSOP [*Special Examination* 1902] (Auckland, New Zealand).
CHEVALIER WORBY BEAUMONT [*Probationer* 1895, *Student* 1899, *Qualified* 1902].
JAMES HERBERT BELFRAGE [*Probationer* 1897, *Student* 1901, *Qualified* 1902].
RALPH BERRILL [*Probationer* 1897, *Student* 1899, *Qualified* 1902].
WILLIAM BEVAN [*Special Examination* 1902] (Johannesburg).
HAROLD COURTENAY BISHOP [*Probationer* 1896, *Student* 1898, *Qualified* 1902].
EDWIN DACE BROWN [*Probationer* 1898, *Student* 1899, *Qualified* 1902].
REGINALD PERCY CHAMBERLAIN [*Probationer* 1899, *Student* 1900, *Qualified* 1902] (Leicester).
HENRY CHAPMAN [*Probationer* 1896, *Student* 1899, *Qualified* 1902].
ALFRED ROWLAND CONDER [*Probationer* 1898, *Student* 1899, *Qualified* 1902].
EDWARD FURNESS MARSON ELMS [*Probationer* 1897, *Student* 1901, *Qualified* 1902].
RICHARD FIELDING FARRAR [*Special Examination* 1902].
JOHN HAROLD GIBBONS [*Probationer* 1895, *Student* 1898, *Qualified* 1902] (Manchester).
THOMAS HARRY GIBBS [*Probationer* 1895, *Student* 1899, *Qualified* 1902].
THOMAS SEDGWICK GREGSON [*Probationer* 1895, *Student* 1897, *Qualified* 1902].
BAXTER GREIG [*Probationer* 1897, *Student* 1901, *Qualified* 1902].
PERCY JOHN GROOM [*Probationer* 1893, *Student* 1896, *Qualified* 1902].
PERCIVAL JOSEPH HAYWOOD [*Probationer* 1895, *Student* 1899, *Qualified* 1902].
WILLIAM HERBERT HOBDAY [*Probationer* 1898, *Student* 1900, *Qualified* 1902].
ORTON HOLDEN [*Probationer* 1893, *Student* 1896, *Qualified* 1902] (Kettering).
HENRY STRINGER JARDINE [*Probationer* 1895, *Student* 1897, *Qualified* 1902].
IVAN CALROW KENT [*Probationer* 1895, *Student* 1899, *Qualified* 1902] (Chelmsford).
REGINALD GUY KIRKBY [*Special Examination* 1902] (Cape Town).
HENRY LOUIS EMILE MERILLE DE COLLEVILLE [*Probationer* 1895, *Student* 1897, *Qualified* 1901] (Brighton).
WILLIAM JAMES NASH [*Probationer* 1898, *Student* 1899, *Qualified* 1902] (Bournemouth).
CHARLES FREDERICK NEWCOMBE [*Probationer* 1892, *Student* 1897, *Qualified* 1902] (Newcastle-upon-Tyne).
PERCIVAL CORNEY NEWMAN [*Probationer* 1892, *Student* 1894, *Qualified* 1902].
WILLIAM CAMPBELL OMAN [*Probationer* 1895, *Student* 1899, *Qualified* 1902] (Johannesburg, S. Africa).
EDWIN OSMAN PAYNE [*Probationer* 1898, *Student* 1900, *Qualified* 1902].
WILFRED STONEHOUSE PAYNE [*Probationer* 1898, *Student* 1900, *Qualified* 1902].
RICHARD McMINNIES ROBERTS [*Probationer* 1897, *Student* 1899, *Qualified* 1902] (Warrington).
ALEXANDER ROBERT ROBERTSON [*Probationer* 1898, *Student* 1899, *Qualified* 1902].
ERNEST SIMM [*Probationer* 1893, *Student* 1896, *Qualified* 1902] (Blackburn).
SPENCER SMITH [*Probationer* 1896, *Student* 1898, *Qualified* 1902] (Deal).
JOHN SWARBRICK [*Probationer* 1897, *Student* 1900, *Qualified* 1902] (Manchester).
CHARLES FREDERICK WARD [*Probationer* 1898, *Student* 1900, *Qualified* 1902].
LLOYD FOSTER WARD [*Probationer* 1895, *Student* 1898, *Qualified* 1902] (Birmingham).
CHRISTOPHER WILLIAM FREDERICK WHEELER [*Probationer* 1895, *Student* 1899, *Qualified* 1902].
THOMAS WILLIAM WHIPP [*Probationer* 1900, *Student* 1900, *Qualified* 1902] (Scarborough).

HENRY ARMSTRONG WILSON [*Probationer* 1896, *Student* 1898, *Qualified* 1902] (Newcastle-upon-Tyne).
ROBERT GORDON WILSON, jun. [*Probationer* 1897, *Student* 1900, *Qualified* 1902] (Aberdeen, N.B.)
DOUGLAS WOOD [*Probationer* 1898, *Student* 1899, *Qualified* 1902] (Newark-on-Trent).
WILLIE WRIGLEY [*Probationer* 1896, *Student* 1898, *Qualified* 1902] (Wakefield).

As Hon. Associate.

GEORGE MALLOWS FREEMAN, K.C., J.P.

The Secretary announced that by a resolution of the Council under By-law 20 the following gentlemen had ceased to be members of the Royal Institute:—From the class of Fellows, John Tavenor Perry, Robert Emeric Tyler, and Robert Mackay Fripp; from the class of Associates, Cecil Orr, Eustace Godfrey Bird, and Percy Oakden.

The Hon. Secretary addressed the Meeting on some important works recently purchased for the Library and laid upon the table for members' inspection.

Mr. S. Flint Clarkson [*F.*], on behalf of the Practice Standing Committee, having briefly outlined the contents of the book on Dilapidations prepared by the Committee, a discussion ensued, at the conclusion of which, on the motion of the Chairman, seconded by Mr. T. E. Collcutt, *Vice-President*, a vote of thanks was passed to the Committee, with special mention of the names of Messrs. S. Flint Clarkson [*F.*], Sydney Perks [*A.*], and C. H. Brodie [*A.*] (*Hon. Sec.*), for their labours in connection with the production of the work.

The proceedings then closed, and the Meeting separated at 9.15 P.M.

## REVIEWS.

### OLD ST. PAUL'S.

*Old St. Paul's Cathedral. By William Benham, D.D., F.S.A., Rector of St. Edmund the King, Lombard Street. La. 8o. Lond.* 1902. [*Seeley & Co., Great Russell Street, W.C.*]

The old cathedral of St. Paul, founded *c.* 1087, completed *c.* 1255, and destroyed by the Great Fire of 1666, was, according to Canon Benham, "the finest in England of its time." This is surely high praise when we recall Lincoln, Canterbury, York, Salisbury, &c. It was, however, the *largest* cathedral church; for, whether we accept the measurements of Stow, Dugdale, Wren, or Ferrey, its total length was much greater than that of Winchester, and its spire of wood was some sixty or eighty feet higher than the famous spire of Salisbury. In its historical associations it may also be said to surpass all others. Its foundation saw the beginning of the Gothic style, and its destruction was coeval with the close of the Mediæval and the establishment of the Renaissance spirit in England. "Old St. Paul's" was the central feature around which old London grew; it advanced to completion as the city increased in wealth and importance; in their destruction they were not divided; and both rose out of their ashes to resume their pre-eminence in a new age with ever-increasing influence; till now the city is the greatest in extent, population, wealth, and influence of any the world has seen, and its cathedral is not unworthy of the city it adorns.

It is a matter of congratulation that (as if with some presage of the coming doom of the city and its cathedral) Stow described the city with the minute care and accuracy of an inventory, surveyors made good plans, artists executed excellent views of it, while Wenceslaus Hollar made complete and fairly correct plans, sections, elevations, &c., of the cathedral, with details of its most important tombs, &c.

The exact reproductions of Hollar's drawings form a valuable feature in Canon Benham's book. They are more complete and accurate copies, although on a smaller scale, than those given in Ellis's edition of Dugdale's *St. Paul's*, 1818. Longman, in his *Three Cathedrals of St. Paul*, gives as by preference E. B. Ferrey's beautiful drawings of a restoration of Old St. Paul's, in which he corrects, no doubt on good evidence, the often inconsistent plans by Hollar. Canon Benham, in turn, would amend Ferrey's design of the spire, having good corroborative evidence of the accuracy of Hollar in respect to the angle turrets at its base, omitted by Mr. Ferrey. Longman has examined closely into the dimensions of the cathedral as given by Dugdale from Stow, and, following Mr. Ferrey, makes considerable variations from these authorities. Canon Benham gives the leading results in his book.

A very interesting plan shows a comparison between the size and position on the site of the old St. Paul's and Wren's new cathedral.

Having by the aid of these and other illustrations described the old church buildings, subsequent chapters of the book are devoted to "Historical Memories," "The Clergy and the Services," and "From the Accession of the Stuarts."

The author has had the advantage of some important recent works on the same subject; and the very nature of it precludes much variation in the facts or their treatment; but it is no small advantage to have these brought together in a well-ordered and handy way in this very handsome volume, creditable alike to author, publisher, artists, and bookbinder. The reader may feel assured that nothing of any consequence has been overlooked, and that he has in this monograph all that is worth knowing on the interesting church of which it treats.

Besides the illustrations from Hollar, there are many beautiful plates (some printed in colours) of initials and page illuminations from fourteenth- and fifteenth-century manuscripts. "A View of Old St. Paul's and the Three Cranes Wharf,"

compiled from old drawings and prints, forms a charming and appropriate frontispiece.

THOMAS ARNOLD.

## CHICHESTER.

*The Cathedral Church of Chichester. A Short History and Description of its Fabric, with an Account of the Diocese and See. By Hubert C. Corlette, A.R.I.B.A. With forty-five illustrations. 8o. Lond.* 1902. *Price* 1s. 6d. [*George Bell & Sons, York Street, Covent Garden.*]

The volume before us is another addition to the excellent handbooks of "Bell's Cathedral Series," and deals in four chapters with the ancient city of Chichester and its noble pile of buildings. In the first chapter the history of the cathedral is set out briefly and tersely, and relates in graphic manner that so early as the eighth century Chichester was a known centre of civil, though apparently not ecclesiastical activity, and in "Walcot's Early Statutes" there is some uncertain documentary evidence, referring to Bishop Brethelm and the Brethren dwelling at Chichester in the middle of the tenth century. It appears that originally the foundation of the See was at Selsea, by Cædwalla in the seventh century, and in the south aisle of the choir there are now existing some rude sculptured panels which are supposed to have been brought from the original foundation of the cathedral at Selsea.

Mr. Corlette gives at some length the various vicissitudes of the cathedral, and in a somewhat disjointed way traces its history from the foundation in 1088 up to the present time. Numerous illustrations from photographs, old engravings, and books are reproduced in the volume, and a plan of the cathedral is also inserted, taken from the original drawing made by the late Mr. Joseph Butler, architect to the cathedral. This plan shows at a glance the dates at which the various portions of the building were erected.

An interesting account is given of the fall of the cathedral tower in the year 1860, and it is interesting to learn that Sir Gilbert Scott in rebuilding the tower reproduced the original design in its entirety, merely raising the whole body of the tower and spire some five or six feet above its original height.

The exterior of the building is dealt with in the second chapter at some length descriptively, to us in some places rather tediously so, and no attempt has been made to criticise the building from an architectural standpoint. All the important features of the exterior are minutely described, the outer wall of the choir aisle is mentioned as being one of "the most interesting portions of the building, from an archæological as well as from an architectural standpoint. It shows three rows of arched heads of the small twelfth-century windows that used to light the earlier triforium gallery." We all have, of course, our special sympathies with the various periods of English architecture, and we, personally, think there are much more interesting architectural features in the building under notice than the Norman walling to which our particular attention has been called. Gaunt, grey, and sturdy, the detached bell tower, locally known as the Campanile, has, we think, scarcely had justice done to it, a brief technical description failing to give one any idea how its sombre presence adds so materially to the general picturesque and artistic appearance of the whole block. Relying mainly on the strong vertical lines of the buttresses and the octagonal lantern for effect, it forms a feature of the *masse* of which every art lover is proud.

In Chapter III. the interior of the building is described, and also the monuments, and fine views are reproduced of the various interior vistas. In a view of the north aisle choir there is a distinctive French influence, the arcading having a central pier with detached shafts some distance away. The illustrations of the decorations by Bernardi (1519), reproduced from the vault of the Lady Chapel, are very interesting.

The diocese and See are dealt with in the fourth chapter, and reference is made to the Roman foundation of the city, which was then called Regnum. Of the numerous Roman remains found in the city no mention is made by Mr. Corlette, although frequently when excavating within the city walls it is a common occurrence to meet with Roman coins, pottery, urns, and other remains of this far-off age.

The remaining buildings in the See have, we think, been done meagre justice to in the half-page allotted to the description of them, and the unique Market Cross which is illustrated, and which is probaly the finest now extant, is merely passed over with the remark that it was built by Bishop Storey in the year 1500.

The old Queen Anne and Georgian buildings in the city are not mentioned at all, although Chichester owes much of its charm to this freely treated classic work, and still contains three buildings said to be designed by Sir Christopher Wren.

JAMES SAUNDERS.

## CATHEDRALS OF GREAT BRITAIN.

*An Illustrated Guide to the Cathedrals of Great Britain, their History and Architecture. By the Rev. P. H. Ditchfield, M.A., F.S.A. Illustrated by Herbert Railton, J. A. Symington, H. M. James, H. Crickmore, &c.* 8o. 1902. *Price* 7s. 6d. [*London: J. M. Dent & Co. Philadelphia: J. B. Lippincott Co.*]

In a work of this kind, comprehending such a number of architectural examples of the highest order, necessitating the examination of such a

mass of structural and literary material, the difficulty of the compiler is to know what to omit. In 450 pages, purporting to contain an account of thirty-three English cathedrals (and abbeys), nine Scottish and four Welsh cathedrals, as well as by-references to other objects of interest in their neighbourhood, it is obvious that in some cases only a brief and superficial account can be given. The sources drawn from are, in general, up-to-date, though some of them have latterly been called in question. In a guide-book, however, there is neither space nor occasion for controversial matter, and the personal opinions of the author are not to be too much obtruded; but if he be an antiquary, and occasionally puts them somewhat strongly in regard to *vexata quæstio* or matters of taste, it may perhaps not be too heavily laid to his charge.

The Rev. P. H. Ditchfield's sympathies are broad enough to prevent his appreciation of Gothic architecture standing in the way of a full admiration for English Renaissance art. He says, speaking of St. Paul's Cathedral, "It is the finest and grandest building in London, if not in the world." It comes first in order in the volume, twenty pages being devoted to it. He, at least, sees no incongruity in the note struck by the recent decoration there. The mosaic work, he says, "adds much to the beauty of the cathedral," and is "worthy of the highest praise."

Nor will he hear of French origin for English Gothic. He says: "There could not be a greater error; no foreign masons taught our English masons the secret of their art. They were wearied with the Romanesque uncouth details of Norman art—were feeling after and finding a more excellent way, and discovered the beauties of Gothic architecture." If anything, he thinks the French lagged behind us, and their Flamboyant style was a travesty of our Decorated work. These may be gratifying conclusions, but do not carry conviction, I believe, to many minds.

The brief story of each building is fairly well separated from the description—a difficult matter to compass; but need for brevity sometimes makes abrupt sentences, and here and there they are mixed up as to matter. The author accepts 1133 as the date of Durham nave vault, and quotes the belief that it is the only original stone Norman vaulting over a nave in England. Cardinal Langley merely altered the Galilee Chapel (p. 291), as the context states.

A revision for a new edition will allow of rectification of such slips as "General Gordon died 1890" (p. 30); "The *width* of the tower = 144 feet" (p. 422), referring to St. Albans. (It might then be added that Mr. J. O. Scott designed the choir pulpit, a gift of the Freemasons of England, though it may have been thought that it, at least, of recent fittings, was distinguishable from others by an amateur designer.) It is said (p. 417) to be the largest (cathedral) in England, but is given six feet less length than Winchester (p. 422). Only the nave is really intended. The area given exceeds that in Lord Grimthorpe's book. In the case of Lincoln it is nearly 13,000 feet less than the "*Book of Building*," or Bell's "*Itinerary*." Wyatt is pilloried throughout the book; and reckless restoration is also properly condemned. In many cases we find the author's judgment expressed on matters of taste somewhat beyond what a guide-book demands—*e.g.* "*This* adds much to the beauty," "*That* is a noble example," "good windows," "a superb structure," "the finest portico in Europe," "grandest and most magnificent in the world," &c. "*Late* Early English" is not a happy classification.

Fourteen plans are given, and it would be an advantage if they were placed opposite the descriptive text in every case. An increase in their number would be also helpful. A note that all dimensions are in the clear in the tabular lists might be added.

There are eighty illustrations, many by Mr. Herbert Railton, whose poetical pencillings are always pleasing, if only suggestive of the detail which an architect knows he ought not to, but usually does, look for.

A short glossary of terms at the end is helpful to the uninitiated.

To the traveller who will carry but one guide-book to read as he runs across our island, this will serve his turn for English examples, if not for those across the Border, to tell him something of the work of "the great unknown toilers who built so securely and so well, who first put their hearts, lives, affections, and religion into their work."

E. W. Hudson.

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## ALLIED SOCIETIES.

### THE EDINBURGH ASSOCIATION.

#### Mr. Hunter Crawford's Presidential Address.

Gentlemen and Fellow Members,—Honour and duty go with the position of President of this Association. I thank you for the honour you have done me, and I shall endeavour to carry out the duties to the best of my ability, and for the advancement of architecture and the objects of this Association.

Among the first, and perhaps the most difficult part I am called upon to perform, is that of addressing you at the opening of the session. This duty is to me all the more onerous because I feel that this Association is at a turning point of its career. We are now entered on the second

year of the life of this Association since its constitution was altered by amalgamation with the Edinburgh Architectural Society. During the past year we were only beginning to settle down to the new order in our new premises, and now we are about to see how the scheme will work, and whether the labours of your committees will strengthen the Association and put new energy into it.

This Association is the oldest architectural society in the country, and its early history and struggles have often been referred to from this chair, while the changes that have taken place in the last few years are fresh in your memory; but I would now draw your attention to the present position of our body, and its objects and uses, and its facilities for carrying these out.

We have 49 Fellows, 224 Members, 90 Associates, and 6 Corresponding Associates on our roll, and our objects are to "promote and afford facilities for the study of architecture, and to serve as a medium of friendly communication between the members and others interested in architecture."

I think many of our members do not realise the facilities provided to carry out these objects. There is our excellent reading-room in a very central position and supplied with the current architectural journals. We have a very good library of architectural works which may be consulted at the hours arranged by the committee. We have our lectures and discussions on architecture, decoration, and kindred subjects, and our visits to buildings old and new. Advantage can be taken of these facilities by all members. Besides these the Associate section has its own lectures and also competitions, the latter being an excellent help in their study of architecture.

Further, the days when we have visits to buildings, and the evenings when we have lectures, and the club nights of the Associate section, serve as an excellent "medium of friendly communication between the members and others interested in architecture." The Association is therefore carrying out its objects to a certain extent, if not as fully as it might. One thing is needed for further development, money. You have heard to-night our financial position, which, in view of the heavy and exceptional expenditure of the past year, is satisfactory. It is obvious that economies must be effected, and our income increased, if we are to continue the prize schemes and to resume the publication of our Transactions and Sketch-book. If the Publication and Sketch-book Committees would only meet and carefully consider ways and means, prepare clear and trustworthy estimates of cost and revenue, and submit their proposals at an early meeting, I am sure a way would be found to resume our publications. There is plenty of material, and there is plenty of interest, among our members to give properly managed publications the necessary support.

In one branch of activity our Association is wanting. We have no work classes or studio. Since the School of Applied Art was begun our work classes have been discontinued, as it was felt that, as long as that school provided good teaching under *the immediate control of architects*, anything our Association could do would be a hindrance rather than a help. We are unanimous in acknowledging the excellence of the architectural education supplied by the School of Applied Art, especially in draughtsmanship and knowledge of style, and we architects have seen the results in our own assistants; and the marked success of its students (out of all proportion to their numbers) are known to all of you. Could we rely upon this school being continued on the same lines as hitherto, with a prospect of its development to include all the teaching necessary for the full education of our students, we could wish for nothing better; but this is improbable, everything pointing to the early closing of the school or, at any rate, its removal from the direct control of architects engaged in the practice of their profession. So soon as the school loses touch with practising architects, we may look for a falling-off in results. There may be more passing of examinations, more leaving-certificates granted, more academic teaching; but the results, so far as providing the students with ability to design and knowledge to construct, will be found to be meagre in the extreme. I ask the architects of this room what weight they give to South Kensington certificates of honours in building construction when engaging an assistant.

Is it not almost invariably found that knowledge acquired to pass these examinations is of little use when the student is brought face to face with a single piece of real building construction? The knowledge has been imparted by means of text-books and diagrams, but lacks that realism and life which could only be imparted by the direct teaching, or direction, of men who are daily engaged in practical dealing with building, from the architect's standpoint. I say from the architect's standpoint because building—and included in the terms are all the building trades—is rarely a mere question of building alone; it is not simply construction for durability or stability, but constructing with the further object of obtaining an effect. The best form of dampcourse in a wall, or the concealed timbers in a roof, may be construction alone; but the face of the wall above the dampcourse, or an open timber roof, requires construction with a view to effect. Further, architects rarely design a wall or a pillar merely of sufficient strength to carry the superimposed weight; they make them of dimensions, "not only to *be* strong, but to *look* strong."

This brings us right into the subject which has lately been much discussed, "the education of the architectural student." The subject is not new. For the last twelve years, at least, it has formed the subject of almost every presidential address to the London Architectural Association.

If we consider what an architect should be, it may help us to come to a conclusion as to the best manner of educating him for the work he has to do. All that makes the ideal architect cannot be found in one man. Ruskin says:

> If an architect lays his bricks and stones well, we praise him for his manipulation; if he keeps well within his contract, we praise him for his calculation; and if he arranges his beams well so that no one drops through his floors, we praise him for his caution. But if he is to be a great architect, he must do something more than possess and exercise these qualities.

Professor Simpson, of Liverpool, in more prosaic language says:

> An architect should, in the first place, be a man of good, all-round general education, should possess a knowledge of mathematics and the elements of science and physics, and have sufficient acquaintance with French and German at least to enable him to travel with profit and with pleasure, and to read and learn from the many books on architecture published in these languages. He should also be a man of wide sympathies, taking a keen interest in other arts besides his own, especially in painting and in sculpture. An eye for colour is, in fact, essential to an architect. . . . Lastly, but it is by no means the least important necessity, the architect must possess imagination to conceive and an educated taste to correct his conceptions.
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> The above may be termed general qualifications.
>
> His special ones must include a thorough knowledge of the materials to be used and the work to be done in the different trades. . . . He should be a master-builder in all; able to guide and direct the workmen under him, and should understand, not only the practical, but also the æsthetic use of all materials . . . in one word, the art of building.

But even Professor Simpson has omitted a great deal from the equipment of the modern architect. As a man, he should be of high honour, strict and just; he should have a general knowledge of all styles; a good knowledge of all applicable to the present day, and as intimate a knowledge of at least one style as he can possibly attain to; of business capacity to carry contracts to a successful conclusion, tactful and of untiring industry. Surely such complex qualities require every aid that education can give, and yet nine-tenths of architects have only had an ordinary school education, some drawing lessons, and what they can pick up in the offices in which they are engaged, supplemented by their own private studies.

Book learning is only an infinitesimal part of the education of an architect. It is absolutely essential, geniuses excepted, that the education should be given, or *at the least directly controlled, by architects in the active practice of their profession.* Mr. Hare recently quoted Professor Dewar's brilliant address to the British Association where he said, "There are plenty of chemists turned out now by the Universities, but they are of no use for practical purposes. They are chokeful of formulæ. They can recite theories, and they know text-books by heart. But put them to solve a new problem freshly arisen in the laboratory, and it will be found that their learning is all dead. It has not become a vital part of their equipment, and they are 'floored' by the first emergence of the unexpected." All this is to show that chemists, medical men, and architects can only be taught efficiently by those who are daily solving the problems the students will be called upon to solve at a later date.

A medical student will learn something from a text-book description of how to perform an operation, he will learn more from an exposition of how to do it by a practising surgeon, more still if he sees the operation performed, and most of all by doing it himself. And so with an architect. Reading will do the student good; instruction by a practising architect will be better; assisting the architect in his work is better still; while he will find that nothing will teach him more than the actual carrying out of work himself.

I do not wish to labour the point, but the foundation of any scheme of architectural education must be that the direction and control shall be in the hands of architects.

Mr. Baggallay said:

> Architectural education has been the subject of much that has been said and written in recent years, and considering the many-sided character of an architect's work, and that it is quite impossible for any mere man to have all the skill and knowledge which a theoretically perfect architect should have, it is not very surprising that there are almost as many opinions as there are writers and speakers. Some hold that pupilage is all-sufficient; some that it ought to be done away with; some put their faith in sketching and measuring up what our forefathers built; others say that a modern workshop is the proper school for us; some would have the German school system; others the French atelier system; and there are plausible, indeed very sound and good arguments which can be and have been urged in favour of each of these theories in turn. . . . The fact that apprenticeship has an immensely strong hold upon the profession, and that, notwithstanding its many abuses, it is, on the whole, a good system, with many advantages, makes all talk of superseding it useless for the present, even if it were possible to prove that what we would substitute would be less open to objection.

We have, therefore, so long as apprenticeship s general, to bear in mind that the education of the architectural student must be almost wholly in the mornings and evenings, only a small percentage being able to take day classes. In this connection, and to show what is being done elsewhere, I would refer you to the London Architectural Association *Brown-book* for this year.

It is evident from that report that the London Association is a live and vigorous body, doing all it possibly can for the education of its members; and although its membership is about ten times as great as our professional membership, still we should like to see greater life and vitality among our members; and this can only be done by each one taking an active part in our work, from the junior apprentice to the senior architect.

We know that some architects of great ability have held aloof from the Royal Institute because they could not see eye to eye with it, and some Edinburgh architects hold aloof from our Association because they do not see the good it is doing. Let them rather throw themselves with heart into the work of education; let them exercise some self-denial and self-sacrifice, and assist in putting our Association in a position to found a school, however humble it may be in its beginnings, to take the place of the School of Applied Art, should it be closed, so far as that school is educating architectural students, and supplement the teaching given there by instruction in the other sides of our work given under the direction of architects.

Mr. Henry T. Hare, well known to you as an able and busy architect, occupying a high position in our profession, President of the London Architectural Association, has yet found time to enrol himself as a student in the modelling class of his Association, and we would like to see some such enthusiasm displayed towards this Association by our brother architects in Edinburgh.

The profession is not a highly remunerative one, and the practical impossibility of architects endowing their own teaching is not realised by the general public. If it were, I am sure many of our wealthy men who realise the importance of architecture as a permanent and the most important evidence of our civilisation—who realise its importance in meeting the æsthetic and practical daily needs of the country—would come forward with an endowment sufficient at any rate to place a school on a permanent basis, so that its annual income would not be subject to a change in municipal policy, and where an annual income would not require as much energy for its acquisition as is devoted to the whole of the conduct and teaching of the school.

At the last ordinary meeting of this Association a committee was appointed to report on this subject of education. I do not wish to trespass upon their report further than to say that in my experience of this country I have not seen great results from the professional or university teaching of architecture, while everything has pointed to the good that is done by teaching it in a school where practically the whole of the teaching is given by architects still in active practice. I have endeavoured to emphasise this point throughout the whole of my address to-night, more especially as in any reports I have seen regarding proposed changes in the art education in Edinburgh I have seen no one take up a strong position on this matter, which I believe to be the most important in the whole question of the teaching of architects. It is the principle which was adopted at the inauguration of the School of Applied Art, and it is the principle which dominates the greater part of the teaching given by the London Architectural Association.

There is an ever-increasing sum spent on the technical teaching of this country, but far too little upon the teaching of architects, who have the directing and control of the enormous number of men and the great sums of money employed in the building industries of this country. I appeal, therefore, to our municipality to take a greater interest in the education of our architectural students; to the men of wealth and with a knowledge of architecture to divert some of their benefactions to this important branch of technical education; while I appeal more strongly than all to architects themselves to join with us in an endeavour to improve and put a permanent basis to the architectural education of this city.

## THE LIVERPOOL SOCIETY.

The Liverpool Architectural Society (Incorporated) divide their meetings into two classes—Ordinary and Members'. The members' evenings are more informal. The President, although occasionally present, does not preside; smoking is general. The Paper is provided by one of the junior members of the Society, and many of those who take part in the discussion on these occasions are diffident about catching the President's eye at the ordinary meetings.

At the members' evening held on Monday, 17th November, Mr. H. L. Beckwith presided over an attendance of 43. The Paper was read by Mr. Otis D. Black on a "Holiday in Normandy," illustrated by lantern slides. The reader proved to be an amateur of French Gothic, and an enthusiast about Flamboyant work. The different character of the carving and figures in the porches at Chartres was well brought out in the lantern illustrations. Part of the Paper was devoted to half-timber work in Dreux and Evreux.

HASTWELL GRAYSON, *Hon. Sec.*